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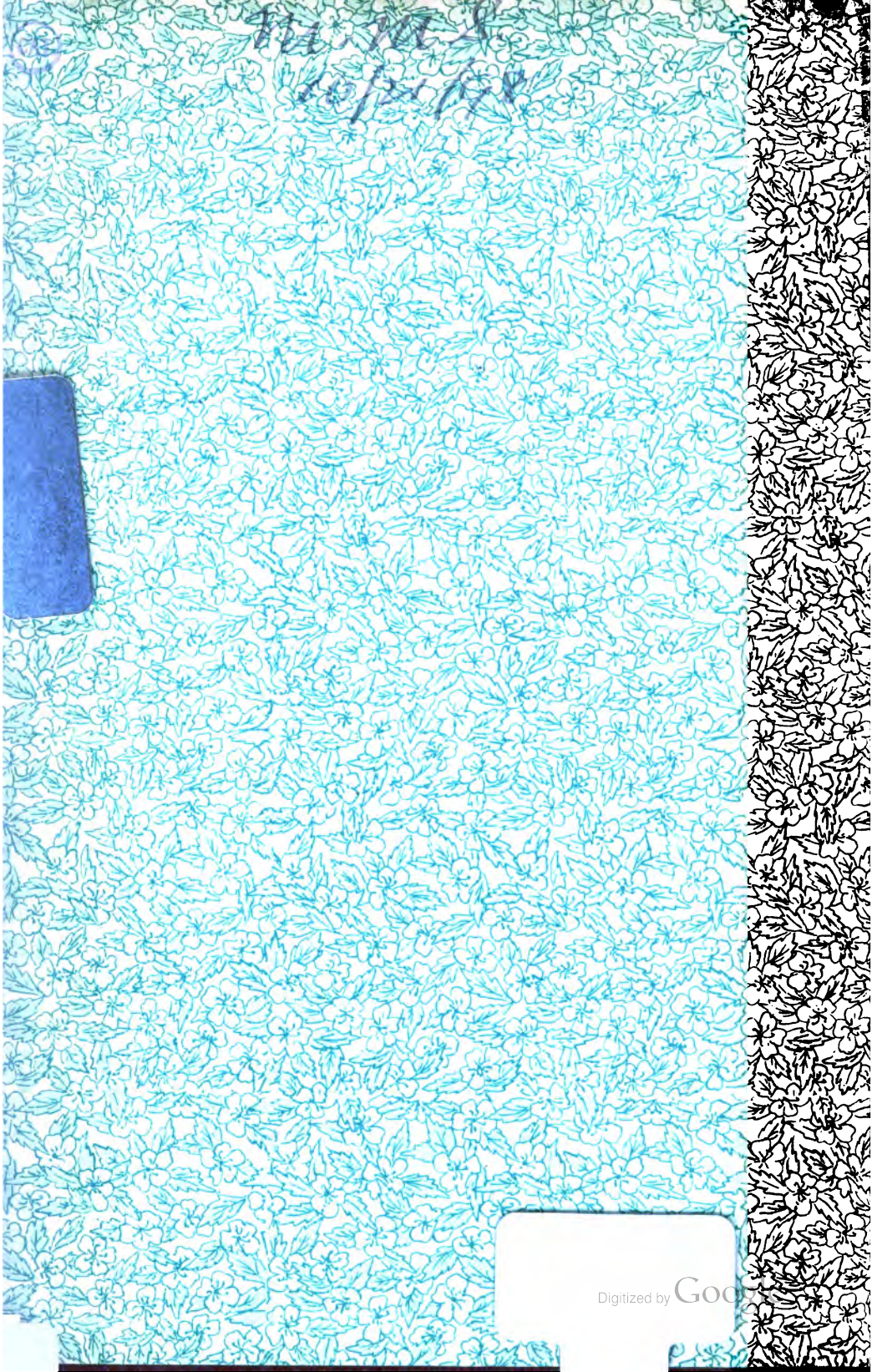
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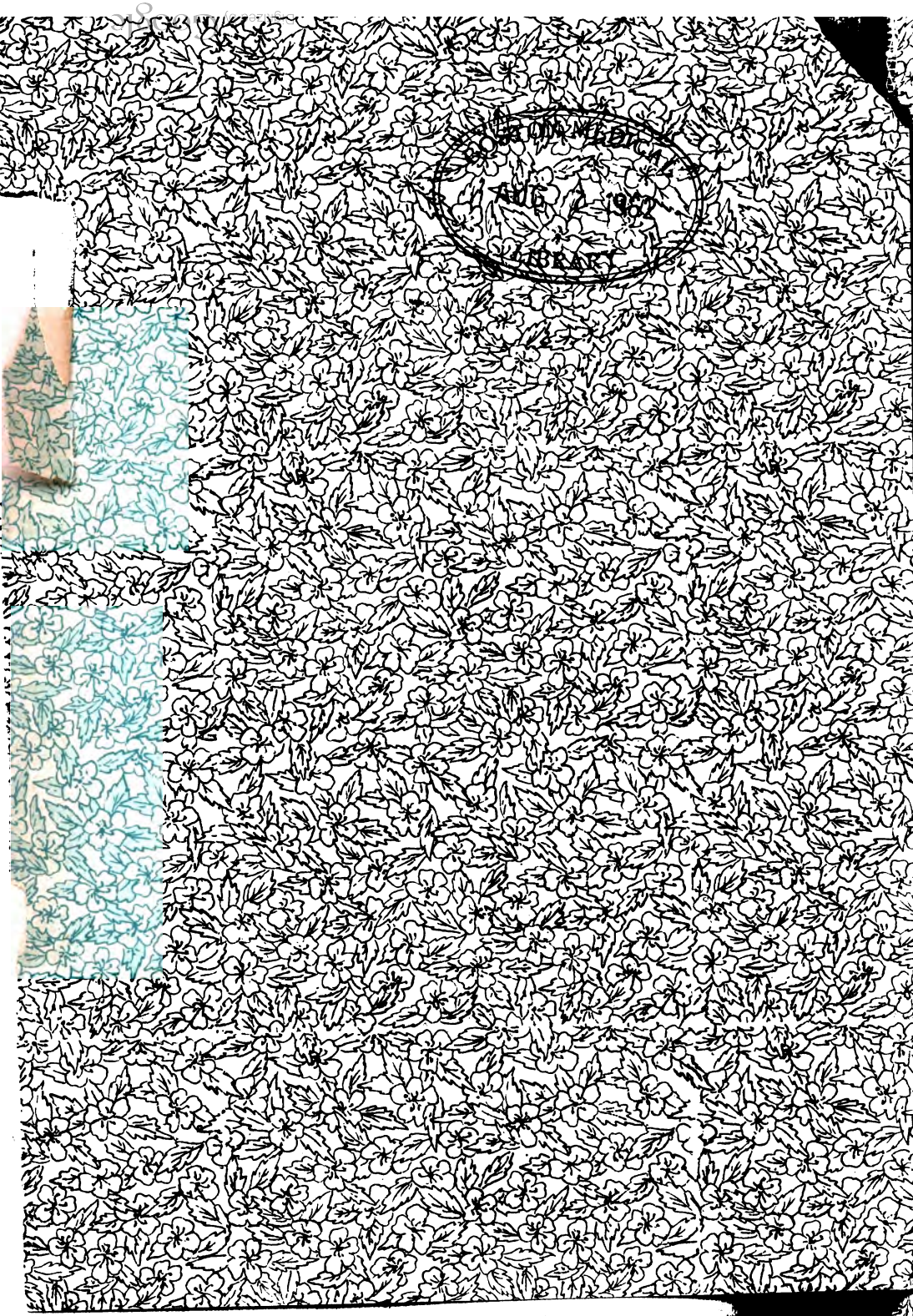
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TRANSACTIONS

OF THE

Texas State Medical Association

THIRTIETH ANNUAL SESSION,

HELD AT

HOUSTON, TEXAS,

APRIL 26TH, 27TH, 28TH AND 29TH, 1898.

AUSTIN, TEXAS:
THE EUGENE VON BOECKMANN PUBLISHING COMPANY.
1898.

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NOTE.

The Association does not hold itself responsible for the views enunciated in the papers and discussions published in this volume.

Minutes and discussions reported by Miss Ella Develin, Galveston.

H. A. WEST, M. D., *Secretary*,
2127 Market Street. Galveston, Texas.

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OFFICERS FOR 1898-99.

PRESIDENT.

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FIRST VICE-PRESIDENT.

J. M. FORT, - - - - - - - - - - - - Paris

SECOND VICE-PRESIDENT.

TAYLOR HUDSON, - - - - - - - - - - Belton

THIRD VICE-PRESIDENT.

R. W. KNOX, - - - - - - - - - - - - Houston

SECRETARY.

H. A. WEST, - - - - - - - - - - - Galveston

TREASURER.

J. LARENDON, - - - - - . - - - - - Houston

JUDICIAL COUNCIL

J. E. GILCREEST, Gainesville, - - - - - - - One year
F. A. FULLER, Jacksonville, - - - - - - - One year
J. D. OSBORN, Cleburne, - - - - - - - - One year
A. B. GARDNER, Bellville, - - - - - - - One year
R. R. WALKER, Paris, - - - - - - - - - Two years
S. F. KING, Sherman, - - - - - - - - - Two years
TAYLOR HUDSON, Belton, - - - - - - - - Two years
C. S. BOBO, Weatherford, - - - - - - - - Two years
G. T. THOMAS, Rogers, - - - - - - - - - Three years
H. K. LEAKE, Dallas, - - - - - - - - - Three years
THOS. G. DUNCAN, Victoria, - - - - - - - Three years
A. C. SCOTT, Temple, - - - - - - - - - Three years

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ORATOR.

M. M. SMITH, - - - - - - - - - - - - Austin

SECTION ON GENERAL MEDICINE.

Geo. H. Lee, Chairman, - - - - - - - - - Galveston
W. F. Starley, Jr., Secretary, - - - - - - - Galveston

SECTION ON OBSTETRICS AND DISEASES OF CHILDREN.

C. M. Alexander, Chairman, - - - - - - - - Coleman
J. M. Frazier, Secretary, - - - - - - - - - Belton

SECTION ON SURGERY.

A. C. Scott, Chairman, - - - - - - - - - - Temple
Marion L. Graves, Secretary, - - - - - - - - Waco

SECTION ON MEDICAL JURISPRUDENCE.

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R. R. Walker, Secretary, - - - - - - - - - - Paris

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J. O. McReynolds, Secretary, - - - - - - - - Dallas

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S. E. Hudson, Secretary, - - - - - - - - - Austin

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R. E. Moss, Secretary, - - - - - - - - - San Antonio

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Ed. L. Batts, Secretary, - - - - - - - - - Galveston

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COMMITTEE ON NECROLOGY.

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T. J. Bennett, - - - - - - - - - - - - Austin
G. T. Thomas, - - - - - - - - - - - Rogers

COMMITTEE ON STATE BOARD OF HEALTH (LEGISLATIVE COM. NO. 2).

R. H. Harrison, Chairman, - - - - - - - - Columbus
M. M. Smith, - - - - - - - - - - - - Austin
Bacon Saunders, - - - - - - - - - - Fort Worth
J. D. Osborn, - - - - - - - - - - - Cleburne
S. C. Red, - - - - - - - - - - - - Houston

PUBLISHING COMMITTEE.

H. A. West, Chairman (ex-officio), - - - - - - Galveston
Vard H. Hulen, - - - - - - - - - - - Galveston
J. F. Y. Paine, - - - - - - - - - - - Galveston

COMMITTEE OF ARRANGEMENTS.

B. E. Hadra, Chairman, - - - - - - - - San Antonio

COMMITTEE TO PREPARE AN ADDRESS ON THE MEDICAL BILL.

J. T. Wilson, Chairman, - - - - - - - - - Sherman
M. M. Smith, - - - - - - - - - - - - Austin
S. E. Hudson, - - - - - - - - - - - - Austin

COMMITTEE TO CANVASS THE STATE ON BEHALF OF THE MEDICAL BILL.

T. J. Bennett, Chairman, - - - - - - - - - Austin
J. C. Anderson, - - - - - - - - - - - Granger
P. C. Coleman, - - - - - - - - - - - Colorado
W. R. Blailock, - - - - - - - - - - - McGregor
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COMMITTEE ON TEXAS CLIMATOLOGY.

I. N. Cline, - - - - - - - - - - - - - Galveston

COMMITTEE ON MINERAL SPRINGS OF TEXAS.

H. A. West, Chairman, - - - - - - - - - Galveston
R. T. Morris, - - - - - - - - - - - - Houston
T. J. Bennett, - - - - - - - - - - - Austin

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SUBJECTS ASSIGNED AS FOLLOWS.

1. GENERAL MEDICINE.

La Grippe,—Etiology, Pathology, Diagnosis and Treatment. Presentation, J. E. Gilcreest, Gainesville.
To open discussion, P. C. Coleman, Colorado.

2. OBSTETRICS AND DISEASES OF CHILDREN.

The Prophylactic Treatment of the Pregnant Woman. Presentation, J. F. Y. Paine, Galveston.
To open discussion, F. D. Thompson, Fort Worth.

3. SURGERY.

Extra Capsular Fractures at Hip Joint. Presentation, J. R. Nichols, Greenville.
To open discussion, I. E. Clark, Schulenberg.

4. STATE MEDICINE AND PUBLIC HYGIENE.

The Water Supply of Texas, and Its Relation to the Cause of Diseases. Presentation, W. M. Terrell, Farmer.
To open discussion, A. O. Scarborough, Schulenberg.

5. GYNECOLOGY.

The Proper Supports for Uterine Displacements. Presentation, J. W. Scott, Houston.
To open discussion, F. Herff, Jr., San Antonio.

6. OPHTHALMOLOGY.

The Treatment of Granulated Lids. Presentation, F. D. Boyd, Fort Worth.
To open discussion, R. F. Miller, Sherman.

TIME AND PLACE OF MEETING.

San Antonio, - - - - - - Fourth Tuesday in April, 1899.

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CONSTITUTION AND BY-LAWS

OF

THE TEXAS STATE MEDICAL ASSOCIATION,

AS AMENDED AND ADOPTED AT THE 30TH ANNUAL MEETING,

HOUSTON, 1898.

CONSTITUTION.

ARTICLE I.

The name and style of this association shall be the "TEXAS STATE MEDICAL ASSOCIATION."

ARTICLE II.

The object of this association shall be to organize the regular medical profession of the state in the most efficient manner possible; to encourage a high standard of professional qualifications and ethics; to promote professional brotherhood; to labor for the advancement of state medicine, *i. e.*, of public hygiene; of medical education; of medical jurisprudence and public institutions for the sick and infirm.

ARTICLE III.

Every regularly educated physician within the limits of this state, who is a graduate of a regular medical college in good standing, and who adopts and conforms to the Code of Ethics of the American Medical Association, shall be eligible to membership in this association, except those of the negro race; provided that no person shall be eligible to membership who has not complied with the laws of Texas governing the practice of medicine now in force or that shall be hereafter enacted.

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ARTICLE IV.

SECTION 1. The officers of this association shall be one president, three vice presidents, one secretary, one treasurer, nine chairmen and secretaries of sections, and twelve members of the judicial council.

SEC. 2. The president and vice presidents shall be elected for one year; the secretary and treasurer shall be elected each for five years; and every officer shall remain in office until his successor is duly elected and installed.

ARTICLE V.

SECTION 1. It shall be the duty of the president to preside at all meetings of the association, when present; to give the casting vote; to see that all the rules of order and decorum are enforced in all deliberations of the body; to sign the approved proceedings of each meeting, and to approve such orders as may be drawn upon the treasurer for expenditures ordered by the association.

SEC. 2. It shall be the duty of the first vice-president to preside in the absence of the president; and in the absence of the president and first vice-president the second vice-president shall preside; and in the absence of the president, first and second vice-presidents the third vice-president shall preside.

SEC. 3. In the absence of the president and all the vice-presidents the association shall, by ballot, elect one of its members to preside *pro tem.*

SEC. 4. It shall be the duty of the secretary to keep a true and correct record of the proceedings of each meeting; to preserve all books, papers and things belonging to the archives of the association; attest all orders drawn upon the treasurer for moneys appropriated by the association; keep a register of the members, the dates of their admission and places of residence. He shall attend all committees that may be appointed by the association with such documents as may be necessary for reference; report such unfinished business of the previous meetings as may appear upon his books, requiring action, and shall attend to such other business as the association may direct. He shall also supervise and conduct all the correspondence of the association.

SEC. 5. It shall be the duty of the treasurer to collect all moneys due the association and receipt for same; and keep the accounts of the association with its members, and pay all orders drawn on him by the president and attested by the secretary and by the chairman of the committee of publication, and make an annual report of the finances

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of the association, and furnish the secretary with a list of delinquent members; and, if required, give bond for the faithful performance of the duties of his office.

ARTICLE VI.

Vacancies occurring in the office of the association shall be filled by appointment by the president, and he shall have the appointment of all the committees not otherwise provided for.

ARTICLE VII.

SECTION 1. County and district societies in affiliation with this association shall be entitled to representation at each meeting of the association upon this basis, to-wit, two delegates for every ten members, and one for each fraction of ten over five.

SEC. 2. Before admission to a seat in this association each delegate shall produce a certificate of delegation duly signed by the secretary of his society and pay to the treasurer the annual dues of $5.00.

SEC. 3. Delegates shall have the rights and privileges of members for that meeting of the association to which they are sent.

SEC. 4. Delegates to this association from any other state or national association, who shall present certificates of delegation duly signed, shall be entitled to seats and to participate in the scientific business of the association, but shall not be entitled to vote or be required to pay dues.

SEC. 5. This constitution shall immediately take effect from its adoption.

BY-LAWS.

ARTICLE I.

The Texas State Medical Association shall meet annually at such time and place as may be determined by the committee on nominations.

ARTICLE II.

Fifteen members or any number over shall constitute a quorum for business.

ARTICLE III.

The president shall call the meeting to order, cause the secretary to read the proceedings of the previous meeting, which, after approval, shall be adopted.

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ARTICLE IV.

In case there be no quorum, the meeting shall adjourn from day to day until such quorum be had.

ARTICLE V.

The annual dues of each member shall be $5.00 United States currency. Initiation fee, $2.50.

ARTICLE VI.

The usual parliamentary rules governing deliberative bodies shall govern the business workings of this association.

ARTICLE VII.

All questions of business before this association shall be determined by a majority of votes present.

ARTICLE VIII.

It shall be the duty of the president to deliver, at each annual meeting of the association, an address.

ARTICLE IX.

One member from each congressional district represented shall constitute a committee on nominations for offices and place of meeting. Said committee shall report action at the beginning of the session on the morning of adjournment. Five members shall constitute a quorum for the transaction of business. Their duties shall be to nominate a president, three vice-presidents, secretary, treasurer, members of the judicial council, delegates to the American Medical Association, and places of meeting.

ARTICLE X.

The secretary of the association shall receive, as a compliment, at each annual session, a draft from the president upon the treasurer for the sum of $200.00 for valuable services rendered the association, said order to be paid by the treasurer; and he shall also be allowed to draw upon the treasurer, as usual, for expenses incident to the office. The treasurer shall receive for his services $150.00.

[NOTE.—The following resolution was adopted at the Austin meeting, April 28, 1887: *Resolved*, That in future no advertisements be inserted in the volumes of transactions of the association, and that $300.00 each year be set aside from the treasury as compensation to the publishing committee for their time and labor in editing and publishing the transactions.]

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ARTICLE XI.

It shall be the duty of the president, three months prior to each annual meeting of the association, to notify by circular the profession of the state and county organizations throughout the state, and urge attendance.

ARTICLE XII.

No personal grievances shall be allowed to come before the general body for discussion. All questions of a personal character, including complaints and protests, and all questions on credentials, shall be submitted in writing, read by the secretary, and referred by the president at once to the judicial council, without discussion.

ARTICLE XIII—JUDICIAL COUNCIL.

SECTION 1. A council consisting of twelve members shall be appointed by the nominating committee, whose duty it shall be to take cognizance of and decide all questions of an ethical judicial character that may arise in connection with the association.

SEC. 2. Of the twelve members of the council first appointed the four first named on the list shall hold office for one year, the second four named shall hold office for two years, and the third four named shall hold office for three years; so that four new members shall be appointed each year, who shall hold office for three years. The said council shall organize by choosing a president and a secretary, and shall keep a permanent record of its proceedings.

SEC. 3. It shall be the duty of the judicial council to discipline members for infraction of the Code of Ethics, or for violation of any special order or resolution of this association, its Constitution or By-laws. Such discipline may be either (*a*) reprimand, (*b*) suspension for any definite period, (*c*) expulsion from the association.

SEC. 4. Charges against a member shall be presented in writing over the signature of the accuser, with specifications as to the time and place of the offense and names and residence of his witnesses, to the chairman of the judicial council, who shall submit the same to the council at its next meeting.

SEC. 5. The judicial council shall consider the charges and specifications, also the reliability of the accuser and the witnesses, and shall by vote decide either to "entertain" or "not entertain" said charges. In the latter case the charges shall be returned to their author with the action of the council endorsed thereon. If the council decides to entertain the charges, it shall notify the accused, furnish him with a copy of the charges, specifications and names of witnesses, also the

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time and place where the case shall be heard. The accuser shall also be notified of the same and instructed to have his witnesses present. After a full hearing the council shall vote upon the guilt of the accused, and if guilty, assess his punishment. As soon after the trial as possible, it shall be the duty of the council to report its action to the association.

SEC. 6. The association shall thereupon, without discussion, vote upon the report of the council by ballot, a majority deciding its adoption or rejection. The action of the association shall be final, the association claiming jurisdiction as to who shall constitute its members and what punishment shall be inflicted upon those who violate its rules and regulations.

ARTICLE XIV.—SECTIONS.

The general meeting of the association shall occupy not exceeding two and a half hours of the first morning session, and not to exceed one hour of each other morning session, and the remainder of the morning sessions, the afternoon and first two evening sessions shall be devoted to the hearing of reports and papers and their consideration in the following sections:

1. Practice of Medicine, Materia Medica and Physiology.
2. Obstetrics and Diseases of Children.
3. Surgery and Anatomy.
4. Medical Jurisprudence, Chemistry and Psychology.
5. State Medicine and Public Hygiene.
6. Gynecology.
7. Ophthalmology and Otology.
8. Dermatology and Medical Botany.
9. Microscopy and Pathology.

ARTICLE XV.

The reading of all papers before the sections of this association shall occupy not exceeding twenty minutes, except by permission. All discussion shall be limited to five minutes, unless by unanimous consent of the sections, except the author of the paper, who shall have ten minutes in which to close, and no member shall speak to the same subject more than once, without permission.

ARTICLE XVI.

The president and vice-presidents of the association shall constitute a committee, whose duty it shall be at each meeting of the association, to select a chairman and secretary for each section, to serve during the next succeeding year. The committee shall also select the name of

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some subject for each section, a member to present the subject, and also one to open the discussion of same. These officers shall hold their offices until the close of the proper business of the annual meeting next succeeding their election, and until their successors are appointed. This committee shall present its report to the association on the morning of adjournment after the report of the nominating committee. Vacancies in this committee shall be filled by appointment of the president.

ARTICLE XVII.

The foregoing Constitution and By-Laws shall not be altered or amended except when the proposed amendment is offered in writing at a regular meeting, laid over until the next regular meeting, and be adopted by two-thirds of the votes cast.

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MINUTES

OF THE

THIRTIETH ANNUAL MEETING

OF

The Texas State Medical Association,

HELD AT

HOUSTON, TEXAS,

April 26th, 27th, 28th, and 29th, 1898.

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TEXAS STATE MEDICAL ASSOCIATION.

THIRTIETH ANNUAL MEETING.

FIRST DAY.—*Morning Session.*

TURNER HALL, HOUSTON, TEXAS, April 26, 1897.

The association was called to order by Dr. Joseph A. Mullin, chairman of the Committee on Arrangements, who introduced Rev. H. D. Aves of the Episcopal Church, who invoked the Divine blessings upon the convention and its labors.

Hon. Samuel A. Brashear, Mayor of Houston, then delivered the following address of welcome:

Gentlemen of the Texas State Medical Association:

Coming as you do from all parts of our great commonwealth, and representing the learning and integrity of the state, it will give the citizens of Houston more than ordinary pleasure to entertain you. Our city, our hearts and our homes are open to you during this, your thirtieth annual convention.

Hon. J. W. Jones, in welcoming the visitors on the part of the citizens of Houston, said that the rapid strides made by the medical profession during the past few years was largely attributed to the seannual meetings at which time the good work was discussed and the proper means of relieving the physical sufferings of humanity were agreed upon. In closing Mr. Jones remarked that, although there were a large number of physicians in Houston, the death rate was very small and was constantly being made smaller. He thought that the visitors, therefore, would be perfectly safe in trusting themselves to

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their local brethren. At any rate he echoed the sentiments of Mayor Brashear in extending a cordial and hearty welcome on the part of the citizens of Houston, who were always gratified to see and to entertain the members of the Association which was now about to convene.

Dr. Mullen then announced a reception in honor of the visitors at the residence of Dr. Stuart this afternoon from 5 to 8 o'clock, an excursion down the Bayou to-morrow, a street car excursion over the city on Thursday, and on that night a reception at Turner Hall.

The President, in responding to the addresses of welcome, said that the Association was glad to again meet in Houston, its birthplace thirty years ago. The business of the meeting was somewhat serious, but every one knew that doctors saw enough serious things in their daily life, and they were, therefore, all the more happy to accept the warm-hearted hospitality extended them by the physicians of Houston, and by the citizens through Mayor Brashear and Mr. Jones.

The Secretary, after calling the roll, announced a quorum present.

Reading of the minutes of the last meeting was, on motion, dispensed with.

The Secretary read his annnal report as follows:

SECRETARY'S ANNUAL REPORT.

Mr. President and Gentlemen:

I beg to present herewith my annual report, and incorporate with the same a statement as to the publication of the transactions for 1897:

MEMBERSHIP.

On the roll, transactions 1897: Honorary, 26; ordinary, 244; total, 270,
Elected at Paris: Ordinary, 19.
Dropped from the roll since 1896: By death, 5; by non-payment of dues, 62; total dropped, 67.

I have not been informed as to the death of any member since my last report, nor has any record of such been found in the medical journals; the following, however, have been since reported: Dr. J. H.

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Blackburn, Mineral Wells, died — ——; Dr. E. N. Camp, Lewisville, died March 11, 1898; Dr. N. B. Kennedy, Hillboro, died August 10, 1897.

The transactions for 1897: The small attendance and meager addition of new members at the Paris meeting resulted, after payment of the debts of the Association, in leaving an empty treasury. With an uncertain outcome in regard to collections, I did not feel justified in arranging for publication until the funds were in hand to pay for the same. The Treasurer's collections were insufficient until about December 1st. The bid of the Von Boeckmann Publishing Co., of Austin, being the lowest, was accepted.

The bill is as follows:—400 copies; 390 paper; 10 morocco.

69 pages brevier, $1.00 per page	$ 69 00
139 pages long primer, at 90 cents per page	125 10
Printing and inserting potrait	4 00
Binding 10 copies in morocco	7 50
Addressing and mailing	3 00
Postage	24 68
	$233 28

The bill has been paid, and I am happy to say a balance left in the Treasurer's hands.

Cost per volume, delivered, about 57 cents.

My account with the Association since last report is as follows: H. A. West, Secretary, in account with the Texas State Medical Association:

1897.	DR.	
April 30.	Balance due at last report	$ 3 00
	Dr. J. O. McReynolds, dues	5 00
	Dr. W. F. Cole, dues	5 00
	Cash	10 00
May 15.	S. T. M. A. subscription	10 00
	Dr. Sofie Herzog, dues	5 00
June 15.	Dr. G. T. Thomas	2 50
July 15.	Copy transactions sold	1 25
Dec. 30.	Dr. S. B. Kirkpatrick, dues	5 00
1898.		
April 9.	Dr. T. M. Taylor, dues	10 00
		$55 75
April 9.	Balance due H. A. West	3 45
	Total	$60 20

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1897.	CR.	
April 24.	Express, 75c.; envelopes, 25c	$ 1 00
	Telegram	65
May 1.	Typewriting	50
May 3-22.	Postage	75
May 17.	Knapp Bros., on account	25 00
July 15.	Knapp Bros., balance	14 00
Dec. 9.	Expenses to Austin, account transactions	6 00
Dec. 20.	Postage	50
1898.		
Jan. 10.	Postage	50
Feb. 15.	Postage	50
Feb. 18.	Express charges on transactions	80
March 1.	Postage	50
April 11.	Knapp Bros., on account program 1898	10 00
April 15.	Postage	50
	Total	$60 20

No one regrets more than I do the omission of the discussions from the last proceedings. I made every effort in my power to obtain a transcript from the stenographer; the only explanation of Mr. Pierce's failure to carry out his contract was, that he was unable to do so, on account of ill health. I insisted upon his returning one-half of the amount he had received, which so far he has failed to do.

The person nominated for chairman of the Section on Obstetrics was dropped from the roll for non-payment of dues, and has not been a member of the Association since 1894; upon his absolute refusal to reinstate himself, and the failure of the committee to appoint some one in his place, I was compelled to leave the chairmanship vacant At my request the secretary of the section agreed to act. That I had no authority to place the name of an outside party as an officer of the Association is such a plain proposition that any further discussion of the subject is unnecessary.

The Publishing Committee exercised the discretion with which it is empowered as regards the selection of papers for publication, and are not responsible for the insignificant appearance of the last volume of proceedings.

There appears to have been some misunderstanding in certain quarters as to $300 allowed the Publishing Committee as compensation for editing the transactions, as this work is done by the Secretary, he received the compensation, until he voluntarily relinquished $200 of the amount to relieve the financial embarrassment of the Association. With the restoration of an initiation fee of $2.50 and the prompt payment of dues, there should be no further difficulty in meeting the ex-

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penses of the Association. The great difficulty we have to contend with is the failure of so many members to recognize their responsibility in the payment of annual dues, leaving us unable to properly bind the transactions or employ a competent stenographer. The difficulty in obtaining the services of an expert medical stenographer is one we have had to contend with the past seven years, and not until our finances are in such condition as to enable us to pay what such services are worth, will our proceedings be truly representative of our scientific and intellectual advancement. The strict enforcement of the rules adopted last year at Paris, in regard to collections and droppings of delinquents will in my opinion overcome this difficulty.

In this connection there is another matter to which I wish to call your attention. It will be observed that the names of several gentlemen appear upon the program as authors of papers, or to lead in discussions upon them, who are not members of the Association. Some of these are ex-members, and some have never made application for membership. I have taken it for granted that those in either category will see the propriety of seeking connection with the Association at once, and suggest that you authorize me hereafter not to place the names of non-members residents of Texas upon the program unless their applications for membership had previously been made.

In conclusion I beg to inform you that I received a communication from a representative of the Medical College at Galveston, stating that this institution had abandoned the system of prizes, and advising that no further provision was necessary for continuing the Association medal. Respectfully submitted,

H. A. WEST,
Secretary, and Chairman Publication Committee.

Upon motion, the report was received and referred to the following committee: Drs. W. R. Blailock, P. C. Coleman and J. C. Loggins.

The Treasurer's annual report was next read as follows:

TREASURER'S REPORT.

Dr. J. Larendon, in account with the Texas State Medical Association:

RECEIPTS.

1897.
April 26. To amount cash balance on hand as per last annual report.....$ 80 31
1898.
April 26. To amount cash collected from members for dues up to date..... 1028 00—$1108 31

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DISBURSEMENTS.

1897.			
April 29.	By cash paid H. A. West, Secretary's salary	$ 300 00	
April 29.	By cash paid Frank C. Pierce, Stenographer	50 00	
April 29.	By cash paid State Franchise Tax	10 00	
April 29.	By cash paid J. Larendon, Treasurer's salary	75 00	
April 29.	By cash paid U. S. for postage	10 00	
May 1.	By cash paid Eugene Von Boeckmann on last year's account	153 90	
July 16.	By cash paid Allen & Co., for gold medal	15 00	
Sept. 10.	By cash paid J. R. Riordan for preparing delinquent list	1 00	
Sept. 17.	By cash paid A. C. Gray for printing	5 00	
Sept. 17.	By cash paid U. S. for postage on extra circulars	5 00	
1898.			
Feb. 28.	By cash paid Eugene Von Boeckmann for printing transactions	233 28	
Feb. 28.	By cash paid for exchange on six drafts	80	
April 26.	By cash balance on hand	249 33	$1108 31

Respectfully submitted,

J. LARENDON, Treasurer.

Houston, Texas, April 26th, 1898.

Upon motion it was received and referred to the above committee.

The president then read his annual message as follows:

HOUSTON, TEXAS, April, 26, 1896.

Fellows of the Texas State Medical Association:

I congratulate you on the improved outlook for the Texas State Medical Association. The meeting at Paris one year ago, while not by any means a large one in point of members in attendance, may still be regarded from a scientific standpoint as being an exceedingly successful meeting. The impression, however, seems to have gone abroad that such was not the case. This impression, no doubt, was largely due to two facts, first the acknowledged small number in attendance being noised abroad, and second, that it soon became known generally that the financial condition of the organization was not the very best. I am glad to be able to state to you, however, that this latter diffi-

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culty has been largely removed. Under the workings of the resolutions introduced at that meeting and carried out more or less perfectly by our worthy Treasurer, together with the voluntary contributions made by the members at the Paris meeting, the Secretary informs me that he has been able to publish and pay for the transactions and to bring the Association up to this meeting free from debt, with a small amount of cash on hand in the treasury. In order to do this it was necessary to publish the transactions in a more limited number, and on a smaller scale than might have been wise or desirable under other conditions. The delay in getting out the transactions was due to the fact that the Secretary has absolutely conformed to the resolution passed at our last meeting ordering him not to have them published until sufficient funds were on hand to meet the obligation.

In this connection it occurs to me that the action taken by the Association at its last meeting in instructing the Treasurer to make sight drafts on the members for annual dues unpaid immediately after each meeting was a wise one and should certainly be continued in force; also the resolution instructing the Secretary to strike from the roll of membership those members who have not paid their dues after sufficient warning, say the first of September after each annual meeting.

It is very clear to my mind that the Association cannot prosper as long as the impression is abroad that its financial condition is not established on a safe and sound basis. It is unsafe to depend on the collection of dues each year only from those who attend our annual meetings. If some plan like the above is adopted and practiced regularly by which those who are prevented from attending the meeting of any given year are encouraged to pay their dues, this one fact alone that they do pay them will keep alive their energy and zeal in favor of the organization, and they will be much more likely to feel an interest in the meeting another year, and infinitely more liable to attend.

During the past year matters have been submitted to your President for consideration in which it became necessary for him to act in accordance with his own judgment. Among these may be mentioned the anti-vivisection bill which is now pending in Congress and which it was thought at one time was liable to be hurried through and become a law. I wrote officially to each Representative from this State and our Senators as well, calling their attention to the iniquities of this proposed law, and asked them, as the President and in the name of the State Association, to use all legitimate influence they could bring to bear to defeat it. I received favorable replies, I think from every single member of the Texas delegation, most of them indicating that they would use every legitimate effort to defeat the bill. Those who did not make this promise stated that they had not yet given the

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matter thought, but would do so at the proper time and in view of the request of the medical profession of Texas would be strongly inclined to oppose the measure. It seems to me it would be wise, in addition to this action on the part of your President, for the Association in convention assembled to take formal action in regard to this measure, which resolution should be engrossed and copies forwarded to each Representative and Senator from this State.

Another matter now pending in congress and which should receive our careful attention is that of the various bills proposed to regulate quarantine. As action is liable to be taken on these bills, it behooves this Association to put itself on record with reference to them.

A matter that should commend itself to the pride and patriotism of every doctor on the American continent is the movement on foot by the American Medical Association to raise one hundred thousand dollars by contributions from the medical profession of the United States with which to build a monument to the memory of Benjamin Rush. The delegates from the different states in attendance upon the American Medical Association in Philadelphia pledged that the profession from each one of them would furnish its pro rata of this amount. I ask that this Association take definite action at this meeting and that a voluntary contribution be taken up at some hour set apart for that specific purpose and that the amount be forwarded in cash by the Secretary of the Association to the Secretary and Treasurer of the Rush Monument Association, Dr. Geo. H. Rohe, Sykesville, Md. I beg, gentlemen, that in the rush and hurry of the routine business of this meeting you will not fail to act on this in a manner befitting the memory of this illustrious American physician.

While the committee appointed at the former meeting to take steps for the organization of county and district medical associations in the State have done heroic work, as far as I am informed in the matter, their efforts do not seem to have met with any marked degree of success. Would it be a practical and more efficient idea for this meeting to appoint some well known member in each county whose duty it shall be, if possible, to organize the profession of such county into a county society before our next annual meeting; or in case there is not a sufficient number of regular physicians in the county to constitute a working body, to form several adjoining counties into such a society. I believe that if the Association would exercise the proper wisdom in the selection of these organizers a great deal of good could be accomplished in the next twelve months.

It does seem to me that it is time the great and enlightened commonwealth of Texas was taking some steps toward the organization of an efficient board of health for the State. The matter of vital statistics alone would seem of sufficient importance to justify this course,

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to say nothing of the many other necessities for such an organization under proper legal restrictions. This is a matter of such vital importance to the citizenship of the State at large that this Association, representing as it purports to do the most enlightened and progressive thought on all subjects pertaining to medicine, should consider it, if possible, untrammeled by individual interests, personal predilection or political advancement. It occurs to me that this body cannot afford to longer delay taking very decided and definite action in regard to this matter.

The matter of medical legislation in this State is still open for your consideration. The committee appointed at Paris to go to Austin and urge the passage of the bill adopted by this body at its Fort Worth meeting, I am glad to say discharged that duty most faithfully. Every member of the committee was present at Austin and worked valiantly for the bill I believe this breaks the record as regards the work of the Legislative Committee of this body heretofore. As most of you are doubtless perfectly aware, the Association bill with some unimportant amendments passed the Senate by a safe majority. Notwithstanding the fact that it was reported favorably by the House committee, the members of the Legislature having it in charge were never able to get it squarely before the House for consideration during the regular session. This failure is ascribed to various causes. Some say that the fact that the attention of the House was so absorbed in such important measures as the fee bill and the uniform text-book bill crowded out the consideration of what the members of that body were pleased to style a less important measure. Others charge as the cause of this failure want of faithfulness on the part of some of the officers of the House to promises made to the committee. One of the Senators—and, by the way, a doctor—wrote me exultantly after the Legislature had adjourned, that he had killed the measure in the House with his own little hatchet. Of the truthfulness of any of these statements I am not able to say. Sufficient is it for us to know that we have one more failure to record on our account. It was the general opinion, however, of those having the matter in charge and cognizant of former attempts at medical legislation in Texas that a better impression was made on the legislative mind in regard to this bill than any ever presented before, and that if proper efforts are made to keep up the blows while the iron is hot, by the time the next Legislature assembles public opinion will have been so moulded in favor of the measure that a like effort on the part of this Association will guarantee its enactment into a law. In accordance with your action at Paris, the Legislative Committee, on the failure of the bill to become a law, have continued their efforts to frame, if possible, a more suitable and comprehensive measure, with a view of its presenta-

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tion at this meeting. I know that the committee, especially its chairman, has worked most faithfully and energetically along this line, and will doubtless be able to present for your consideration a report that will commend itself to you in every way. As regards the nature of any bill your committee may submit, I beg each of you to remember that whatever measure this Association recommends must be in accordance with the provisions of the Constitution of the State. This Constitution says most emphatically and unequivocally that there shall be no discrimination made in this State between the different schools of medicine, and if the Legislature should pass a bill making such discriminations the Governor would be compelled to veto it.

So far as I have been able to observe, the workings of the new Constitution and By-Laws have been smooth and regular, and bid fair to promote in a large degree the usefulness of the Association. One amendment to the Constitution occurs as being probably necessary to cover future action on this document. There should be a clause in the Constitution providing that all amendments to it and to the By-Laws be submitted in writing and held over one year before being considered by the Association.

Thanking you, gentlemen one and all, for the uniform courtesy extended to me during the time I have had the honor to be your presiding officer, and wishing for you, individually and collectively, happiness and prosperity during the coming year, and for the Association that the next may be the most prosperous year of its existence heretofore, I beg to remain,

Fraternally yours,

BACON SAUNDERS, President.

On motion the message was received and referred to the same committee as above.

The Judicial Council was called, only four being present—Drs. Osborn, Gardner, Hudson, and Bobo.

The President appointed the following members to fill vacancies: Drs. S. C. Red, Houston; P. C. Coleman, Colorado City; G. T. Thomas, Rogers; W. A. Archer, Houston; and Geo. H. Lee, Galveston. The Council selected for their chairman, Dr. C. S. Bobo, and Dr. Geo. H. Lee, Secretary.

Before the close of the morning session the Judicial Council brought in the following reports, which were adopted:

First was a communication from Dr. Geo. H. Lee.

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GALVESTON, TEXAS, April 22, 1898.

To the Honorable President of the Judicial Council, Texas State Medical Association, Houston, Texas:

SIR:—At a meeting of the Galveston Medical Society, April 21, I was instructed to ask the Judicial Council of the State Association to construe more clearly and more fully the Section 1, Article IV of the Code of Ethics of the American Medical Association, regarding consultations with irregular practitioners, and to ask that the Council decide whether it is permissable for a regular physician or surgeon to meet irregulars in consultation in purely surgical, gynecological or obstetrical cases without violating the Code of Ethics.

At such time as it will suit your honorable body to consider these questions I will be glad to appear before you and explain more fully the situation and the purposes for which these decisions are desired.

Respectfully,

GEO. H. LEE,
President Galveston Medical Society.

In answer it was:

Resolved, by the Judicial Council of the Texas State Medical Association, that the Code of Ethics, in reference to the regular profession meeting with irregular practitioners means the same in every branch of medicine and that there is no difference in meeting an irregular doctor in a medical, surgical, obstetrical, gynecological or any other kind of case. C. S. BOBO, Chairman.

The Judicial Council made a report upon membership, which was, upon motion, adopted.

Adjourned until 2:30 p. m.

FIRST DAY—*Afternoon Session.*

SECTION WORK.

SECTION ON GENERAL MEDICINE.

The Chairman of this section being absent, Dr. J. C. Loggins was appointed to take the chair.

Dr. H. A. West of Galveston read a paper upon "The Differential Diagnosis between Yellow Fever and Dengue, with Some Account of the Epidemic in Texas of 1897."

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After discussion by Drs. Geo. H. Lee, Galveston; R. T. Morris, Houston, and the author, the paper was, upon motion, referred to the Publishing Committee.

Dr. Frank B. King, Houston, read a paper on "The Decadence of the Drug Treatment of Disease." It was received and briefly discussed by Dr. Reeves, of Commanche, and referred to the Publishing Committee.

Dr. J. M. Fort, of Paris, read his paper entitled "A Pathological Problem. Fever; What is It?" The paper was received; opened for discussion.

Owing to the lateness of the hour it was only discussed by Dr. Blailock. Further discussion postponed until the night session.

On motion the Association adjourned until 8 o'clock p. m.

FIRST DAY—*Night Session.*

Call to order at 8:30 o'clock.

The Judicial Council submitted a report recommending certain names for membership, which was adopted.

A resolution was next offered to the effect "That all visiting and regular physicians in the city be given the privilege of the floor and to participate in the discussions and deliberations of this meeting." Carried.

Then came the further discussion of Dr. Fort's paper, in which the following participated: Drs. Blailock, Schenk, Burroughs and Saunders.

Dr. Gardner, Chairman of the Section, having arrived, now presented his report, which was received and referred to the Publishing Committee.

Dr. M. M. Smith, of Austin, then read a paper on "The Prevention of Tuberculosis." Discussion was opened by Dr. S. C. Red, of Houston, which, after further discussion, was referred to the Publishing Committee.

Upon motion adjourned to meet at 9 o'clock next day.

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SECOND DAY.—*Morning Session.*

Call to order at 9:15.

Report of the Legislative Committee was then presented through its chairman, Dr. J. T. Wilson, of Sherman, as follows:

REPORT OF LEGISLATIVE COMMITTEE.

To the President of the Texas State Medical Association, Greeting:

MR. PRESIDENT AND GENTLEMEN: Your committee appointed at the last meeting of the Association in Paris to take active measures in endeavoring to secure the passage of the medical bill then before the Legislature, and which had been reported favorably by the committees from both Houses, with the recommendation that it be passed, beg leave to report that a short time after the adjournment of the Association said committee proceeded to Austin where they were joined by the President of the Association, Dr. Bacon Saunders, and Drs. M. D. Knox, of Hillsboro, and T. D. Wooten, of Austin, members of a former committee, who together with other members of the profession of Austin, including Drs. J. W. McLaughlin, R. M. Swearingen, A. N. Denton and T. J. Bennett, all of whom were enthusiastic in their support of the bill, proceeded to the capitol and had a conference with the Lieutenant Governor and Speaker of the House, who gave us a cordial reception and promised to allow the bill to be called up at the first opportunity. This committee and other members of the profession canvassed both houses to the best of their ability, and soon learned that if the bill could be brought to a vote, it would pass both Houses by a good majority. It was called up in the Senate on the first day of the committee's arrival and readily passed that body on the same day. Owing to political bills, or as they were called, platform demands, which were so engrossing the attention of the House, it was with the greatest difficulty that this bill could be called up after strenuous efforts of several days' duration, and was then side-tracked very promptly for some of the other measures above mentioned. It is due to state that the bill had many ardent supporters in both Houses, and especially among the more prominent members. It was very surprising to note that its worst enemies were among those doctors who were members, nor could they give any just or plausible reason why they were fighting it, as it could not affect them personally. It is known by intelligent men that no measure could be

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passed that would be retroactive in its effect, and yet it is strange to say that some doctors of the State antagonize any medical legislation that is attempted for the good of the State at large. The Governor very readily volunteered the promise that if the bill passed and had no unconstitutional clause in it he would sign it. It was very evident that if this committee could have been sent to Austin in February or early in March, that with the aid of such members as joined it when it did go, this bill would have been a law today. It was also evident that a committee from this body does exert a most salutary influence with their presence, their quiet, courteous and dignified work. To Dr. Field, of Grayson, in the house, and Dr. Yett, of Burnet, in the senate, this Association and the profession of Texas owe a volume of thanks for their splendid work in behalf of the Association bill last winter. Senator Woods, of Grayson, introduced the bill in the Senate, was its ardent supporter, and did most valuable work in having it pass that body. In compliance with the duties for which this committee was formed, it begs leave after having failed to obtain the passage of the Association bill to organize a State Board of Medical Examiners and to license physicians and surgeons by the last Legislature of Texas, to submit another bill for the consideration and endorsement of this body. We beg to elicit the careful consideration and best judgment of the Association for this bill, make whatever changes in your united wisdom you may deem necessary for the best interests of the State and the profession, and when you have arranged it for adoption, let it receive the full and free endorsement of a united body; not a half-hearted sanction of it, but an enthusiastic support, with the full determination to work for it and carry it triumphantly through the Legislature into a law. It is not possible it seems to get at first just what you would like to have, but when once you have been enabled to have an act passed, it will not be so difficult to have the flaws picked out and amendments added. If this Associa6ion will unite upon a bill and every member go to work with a will for its enactment, there is no doubt but that it can have it passed into a law. It is not so much the antagonism of the few doctors who work against it, nor the opposition of the average legislator, as to the neglect of its friends that defeats such a bill. If the members go home from this meeting losing their interest in it and forgetting all about it when they pass the portals of this beautiful and hospitable city, it will certainly die of inanition. Texas with its splendid domain, the fascinating romance of stirring history, the grandeur of its achievements, the glorious possibilities of its rapidly developing future, the ability and scientific attainments of its golden-hearted medical men and the jealousy with which it guards its peerless honor, should not be the last in the union to protect its citizens from the inroads of the quacks and charlatans and ignorant

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pretenders, the head of whose column is turned in this direction and marching rapidly in unchallenged and unmolested; driven from the other States by adequate laws, they find here a fertile and congenial soil in which they thrive. It devolves upon this Association to prevent the bright banner of scientific medicine as it floats proudly in the breeze of progress from trailing in the dust of dishonor and defeat, to uphold the laudable effort of its medical schools, who are striving to furnish the State with educated physicians and surgeons. Here in this historic city, that was located within the very sound of the guns of San Jacinto, which sent the glad tidings of liberty throughout the length and breadth of Texas; let us now prepare a bill and see that it becomes enacted into a law, which shall free our friends and neighbors from the thralldom of ignorance and quackery in the future.

The following States and Territories have examining boards:

*Alabama, Arizona, Connecticut, Delaware, District of Columbia, Florida, Georgia, Cherokee Nation, I. T., Iowa, Louisiana, Maine, Maryland, Massachusetts, Minnesota, Mississippi, Montana, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Oregon, Ohio, Pennsylvania, South Carolina, Tennessee, Utah, Virginia, West Virginia, Washington. The following States have no State boards, but have some laws pertaining to the subject: Idaho, Kansas, Michigan, Nevada, Rhode Island, Vermont, Wyoming. Twenty-seven States, the District of Columbia, Cherokee Nation and Arizona require examinations for license to practice, and seventeen of these require both diploma and examination. Some of the States requiring examinations as well as some that do not have very stringent rules governing the recognition of diplomas. A four years' course of lectures with very considerable amount of preliminary education as a condition of recognition of diplomas is demanded by something over a dozen States; in response to which 117 of the 155 medical schools in this country now require attendance on four annual courses of lectures, of which number twenty-seven require attendance on sessions of eight months, and ten of nine months of each year.

Your committee would respectfully recommend that a committee of three be appointed to prepare an address explaining in a comprehensive way the nature and purport of the bill you send out, have it printed in circular form and distributed to those members of the profession who will take an interest in it and bring it to the notice of legislators. That a committee of five be appointed to canvass the State by correspondence with respectable and influential members of the profession in every county in the State and to bring the subject forcibly to the

*Journal of the American Medical Association.

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notice of candidates for the legislature, obtaining promises where practical for its support and after the election to exert every possible effort to influnce the members elect to give it their support; and further that another committee of five be appointed to go to Austin at the proper time during the sitting of the next legislature and use their best effort to have it passed. We believe that these committees can, if the proper effort be made and they have their hearts in the work, report a complete success to the next meeting of this body, and recommend that these committees receive instructions from this body as to their duties. That some member of the Senate, who is entirely friendly to the bill and who has legislative experience, be selected to introduce it in that body, and that a member of the House who is thoroughly in accord with the principles of the bill and who has had experience, be selected to introduce it in that body; both of these points are very necessary for success. The author of the bill, as he is called, should be willing and ready to introduce and work for it. He should have experience and understand the legislative rules and practices, otherwise the opponents of the bill will be on the alert and take advantage of the inexperience and every inadvertence of the author.

A. B. GARDNER,
Z. T. BUNDY,
L. ASHTON,
TAYLOR HUDSON,
J. T. WILSON.

A BILL

To be entitled an Act to repeal Title Eighty-two of the Revised Statutes of the State of Texas, and to pass in lieu thereof this act. To license physicians and surgeons, to regulate the practice of medicine and surgery, to punish persons violating the provisions thereof in the State of Texas.

Be it enacted by the Legislature of the State of Texas:

ARTICLE 1. That Title LXXXII, Articles 3777, 3778, 3779, 3780, 3781, 3782, 3783, 3784, 3785, 3786, 3787, 3788 and 3789, of the Revised Statutes of the State of Texas, be and are hereby repealed, and the following be enacted:

ART. 2. There shall be established a Medical Council of Texas, consisting of the Attorney General, the Texas State Health Officer, the senior medical member of the Board of Regents of the University of Texas, and the Presidents of the three State Boards of Medical Examiners provided for in this act. The said Council shall be known by the name and style of the Medical Council of Texas, and may make and adopt all necessary rules, regulations and by-laws for their government not inconsistent with the Constitution and laws of Texas, or of the

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United States. The said Council shall organize within ten days from the date of organization of the three Boards of Medical Examiners, and shall elect from its own number a President and Secretary, who shall also act as Treasurer; both of whom shall hold their offices for one year or until their successors are chosen. Four members of the Council shall constitute a quorum for the transaction of business. The necessary expenses of said Council shall be paid when in attendance upon stated meetings, and the Secretary of said Council shall receive in addition ten dollars per day while in attendance upon stated meetings as hereinafter provided for. The said Medical Council shall hold two stated meetings in each year, and special meetings when necessary; all to be held at such time and places as may be deemed proper. It shall select from the list of questions submitted to it by the three State Boards of Medical Examiners, the questions for each examination, and shall supervise the examinations conducted by the three State Boards of Medical Examiners of all applicants for license to practice medicine, surgery and midwifery in Texas, and shall issue licenses to practice medicine, surgery and midwifery to such applicants who have successfully passed the examinations of one of the State Boards of Medical Examiners, or those who have presented satisfactory or properly certified copies from State Boards of Medical Examiners or State Boards of Health of other States as provided for in this act. The said Medical Council shall have no power, duty or functions except such as pertain to the supervision of questions for examinations, and of the examination papers of applicants for licenses to practice medicine, surgery and midwifery, sending a list of applicants to the Boards of Examiners with permit for examination and to the issuing of licenses to such applicants as have successfully passed the examinations of one of the State Boards of Medical Examiners and to such others as are provided for elsewhere in this act.

ART. 3. All persons who desire to practice medicine, surgery or midwifery in Texas after the passage of this act shall make application to the medical council for a permit to appear before one of the boards of medical examiners for examination, such application to contain the information herein provided for and as the council may deem necessary, and any applicant may be rejected for refusal to furnish any of the information called for. A fee of fifteen dollars shall accompany the application of each applicant for license to practice medicine and surgery, and five dollars from each applicant who desires a license to practice midwifery alone.

ART. 4. There shall be organized for the State of Texas three boards of medical examiners to be named and styled as follows: The Board of Medical Examiners of Texas; The Board of Homœpathic Medical Examiners of the State of Texas, and the Board of Eclectic

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Medical Examiners of the State of Texas; said boards to consist of seven members, each, whose term of office shall be two years or until their successors are appointed and qualified: provided that no member shall be a professor of any medical school.

ART. 5. The said board shall consist of men learned in medicine and surgery, who shall have resided in the State of Texas and practiced medicine for not less than five years prior to their appointment, and shall be appointed by the governor on the 5th day of May following his inauguration, from a list of names twice the number to be appointed, to be furnished him and recommended by the Texas Medical Association, the Homœpathic Medical Society of the State of Texas, and the Eclectic Medical Society of the State of Texas. Provided that no one shall be eligible to appointment or service on such medical boards who is addicted to intoxication or the habitual use of morphine, cocaine, or other such drugs. Vacancies occurring in such boards for unexpired terms from any cause shall be filled from the list already in the hands of the governor.

ART. 6. The members of said boards shall qualify by taking the usual oath of office before the county judge of the county in which they respectively reside. The officers of said board shall be a president and secretary; said officers to be members of and selected by the boards. In cases of absence of the president and secretary, a president and secretary pro tem shall be selected from those present by a majority vote, provided in case of death or resignation of either or both of the aforesaid officers their places shall be filled for the unexpired term at the next regular meeting ensuing by a majority of the votes cast. Regular meetings of the boards shall be held at least twice a year at such times and places as the boards may from time to time determine. Due notice of said meetings shall be given by publication in such papers as may be selected by the boards. Special meetings may be held upon call of the president and three members. Four members of the boards shall constitute a quorum. The medical council shall be notified at least two weeks prior to said meetings and a number of questions prepared from all the branches for examinations shall be at the same time sent to them from which they shall select a list for the examinations and return to the respective boards. The boards may prescribe rules, regulations and by-laws for their own proceedings and government, and for the examination by its members of applicants for the practice of medicine, surgery and midwifery which shall be done in writing.

ART. 7. It shall be the duty of said boards at any of their meetings to examine all persons making application to them with a permit from the medical council, who shall desire to commence the practice of medicine, surgery or midwifery in this State and who shall not by the provisions of this act be exempt from such examination; and when an

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applicant shall have passed a satisfactory examination before either of the three boards in session, the fact shall be certified to in a report by the president and secretary to the council, and the questions and answers, with the average of each candidate in each branch, the general average and the result of the examination of all candidates, whether successful or unsuccessful. All such examination papers shall be kept for examination and reference for a period of not less than five years.

ART. 8. On receiving from any of said boards of medical examiners such official report of the examination of any applicant for license, the medical council shall issue forthwith to each applicant who shall have been returned as having successfully passed said examination, and who shall have been adjudged by the medical council to be duly qualified for the practice of medicine, a license to practice medicine, surgery or obstetrics in the State of Texas.

The medical council shall require the same standard of qualifications from all applicants, except in the department of therapeutics, practice of medicine and materia medica; in which the standard shall be determined by each of the boards respectively. Every license to practice medicine, surgery or midwifery issued pursuant to this act shall be subscribed to by the officers of the medical council and by each medical examiner who reported the licentiate as having successfully passed said examinations. It shall also have affixed to it by the secretary of the council the seal of the State of Texas. Before said license shall be issued it shall be recorded in a book to be kept in the office of the council and the number of the book and page therein containing said recorded copy shall be noted upon said license; said book to contain the full transactions of the council.

ART. 9. In case any applicant shall fail to pass a satisfactory examination, he or she shall not be permitted to stand any further examination within the next six months thereafter, but may appear again for examination at the next regular meeting if it does not come within the six months; nor shall he or she have again to pay the fee prescribed by this act within two years from the first examination. Provided, however, no applicant shall be rejected because of his or her adherence to any particular school of medicine or system of practice, nor on account of his or her views as to the method of treatment and cure of disease; and provided further when in the opinion of the president of the medical council any applicant has been prevented from appearing before either of the boards at their regular meetings he shall issue a permit if the applicant is eligible, notify the president of the board of examiners before whom the applicant desires to appear, and, upon receiving said notification and permit, said president shall appoint a committee of three members of said board who

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shall examine such applicant, and if the examination be satisfactory notify the secretary of the council who shall grant him or her a temporary certificate which shall have the same force and effect as though granted by the full board, until the applicant shall have the opportunity to appear before the said board at its next regular meeting, when the said temporary certificate shall become void. No applicant will be admitted to examination who cannot submit satisfactory evidence that he or she is more than twenty-one years of age, and is of good moral character and who has not received a degree from a regularly chartered medical school or university having power to confer degrees, requiring sufficient preliminary education before admittance, and attendance upon at least three full courses of lectures and instruction of not less than six months each, and in three different calendar years. The medical council shall have power to revoke any license granted by it and to cancel its registration when upon satisfactory proof it shall appear that any physician thus licensed has been guilty of gross immoral conduct or convicted of a crime.

ART. 10. The board of examiners shall keep a regular record of their proceedings in a book kept for that purpose. Said register shall show the name, age, place and duration of residence of each applicant, the time he or she spent in medical study in or out of medical schools which have granted said applicant any degree or certificate of attendance upon lectures in medicine; said register shall also show whether said applicant was rejected or licensed under this act, and shall be prima facie evidence of all matter contained therein.

ART. 11. From and after the passage of this amendment, the following persons and no others shall be permitted to practice medicine or surgery in this State: First—All those who were practicing medicine in this State prior to May 16th, 1873. Second—All those who began the practice of medicine in this State after the above date and who have complied with the laws of this State regulating the practicing of medicine in force prior to the passage of this act and whose diplomas or certificates have been recorded by the clerk of the district court of the county in which he or she resides. Third—All persons who shall hereafter receive certificates from the board of medical examiners of this State as above provided for and who shall also in all other respects have complied with the provisions of this act. Fourth,—And provided that all persons who may change their residence to the State of Texas on filing a true copy of a license granted by the board of medical examiners of another State or Territory, certified by the affidavit of the president and secretary of said board with satisfactory proof of the genuineness of the same, and showing that the standard of requirements of the medical laws of said State or Territory and that adopted by said board of medical examiners are equal to that provided for in

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this act and who on the payment of the usual fee of fifteen dollars may be registered and receive a license from the medical council of Texas to practice in this State. Fifth,--And provided further that all persons who desire to hereafter begin the practice of midwifery in this State shall make application to the medical council, said application to be accompanied with the fee of five dollars as herein provided, and when the said medical council may issue a permit to said applicant for examination who shall present the same to one of the boards of medical examiners, and, after passing a satisfactory examination in this special branch will be granted a license to practice midwifery in the State of Texas.

ART. 12. Any person shall be regarded as practicing medicine or surgery within the meaning of this act who shall profess publicly to be a physician or surgeon and shall offer for practice as such, or prescribe for those needing medical or surgical aid, and shall charge or receive therefor money or other compensation, directly or indirectly. This act shall be so constructed as to include persons not pretending to be physicians who offer for sale publicly on the streets or other public places remedies which they recommend for the cure of disease; but this act shall not apply to any commissioned officer or contract surgeon of the United States army or navy or marine hospital service in the performance of their duties as such. Nor to any legally qualified and registered dentist under the laws of this State; nor to any lawfully qualified physician or surgeon residing in other States or Territories meeting registered physicians and surgeons of this State in consultation.

ART. 13. The applicants shall be examined in the following branches: Anatomy, physiology, chemistry, materia medica, therapeutics, histology, pathology, practice of medicine, surgery, including diseases of the eye, ear, nose, and throat, obstetrics, gynecology, hygiene and medical jurisprudence. From this list questions shall be prepared for all these subjects, which at any examination shall be the same for all applicants except, that in therapeutics, practice and materia medica, from these three all the questions submitted to any applicant shall be chosen from those prepared by the board selected by the applicant and shall be in harmony with that school to which the candidate belongs.

ART. 14. The fund realized from the fees aforesaid shall be applied—first, to the payment of the necessary expenses of the medical council as provided for and the necessary expenses of the board of examiners; second, there shall be paid out of this fund ten dollars per day to the secretaries of the council and boards when in attendance upon the meetings, and third, if there be any balance then remaining it shall be divided among the three boards of medical examiners

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in proportion to the number of applicants examined, each member of each board to receive such part of the entire amount paid as that board itself shall determine.

ART. 15. Before any person obtaining a license under the provisions of this act can lawfully practice medicine, surgery or midwifery in this State, he or she shall cause the said license to be recorded in the county clerk's office of the county in which he or she offers to practice. The license shall be recorded by the clerk of the county court in a book to be kept for that purpose which shall be properly indexed. The clerk shall receive from the applicant a fee of one dollar for recording this instrument.

ART. 16. Any person who shall practice medicine, surgery or midwifery in this State in violation of the provisions of this act shall be fined not less than fifty nor more than five hundred dollars for each offense, or by both fine and imprisonment not exceeding six months; and it shall not be lawful for him or her to recover by action, suit, motion or warrant any compensation for services which may be claimed to have been rendered by him or her as such physician, surgeon or midwife.

ART. 17. That title eighty-two of the Revised Statutes of Texas, and articles 3777, 3778, 3779, 3780, 3781, 3782, 3783, 3784, 3785, 3786, 3787, 3788, 3789 of said title be and the same are hereby repealed, and all laws and parts of laws in conflict with this act be and are hereby repealed.

ART. 18. The fact that there is no law in force adequately providing for the licensing of physicians, surgeons or midwives creates an emergency and an imperative public necessity that the constitutional rule requiring bills to be read on three several days be suspended, and the bill be placed upon its final passage, and it is so enacted.

Dr. Blailock moved that the report of the committee just read be received and adopted as a whole and that the thanks of the Association be tendered to the members of that committee for the faithful manner in which they have discharged this very difficult task. The motion was, after a good deal of discussion, finally carried.

The Judicial Council brought in a report of recommendation for membership. Same was received and adopted.

A motion was made and carried that the courtesy of the floor be extended to Dr. Jelks, of Hot Springs, Ark.

Section work resumed.

The reading and discussions on the rest of the papers under general medicine was for the present deferred and the section

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on obstetrics and diseases of children called. A message having been received from Dr. T. L. Kennedy, secretary of this section, to the effect that he would not be able to get here this morning, the Section on Surgery was, therefore, taken up.

Report of the chairman, Dr. B. E. Hadra, San Antonio, was then read, which was referred to the Publishing Commitee.

Section No. 2 was taken up first and a paper on "Fractures and Dislocations of Astragalus and Sub-Astragaloid Dislocations," was read by Dr. J. E. Thompson, of Galveston.

Chairman Hadra announced that all discussions would be deferred until other papers in the Section had been read.

A paper entitled "Fracture of Tarsal Bones," was read by Dr. J. E. Gilcreest, Gainesville, which was received and referred to the Publishing Committee.

The authors of the other papers in the Section not being present, further action in the matter was postponed and President Saunders announced that the report of the Committee on Officers' Reports would be made by Chairman Loggins. The following reports were read and adopted.

B. Saunders, M. D., President Texas State Medical Association, Houston:

Your committee to whom was referred the recommendations of the President bear cheerful testimony to the able and efficient zeal which he has manifested in the discharge of his official duties as President of the Texas State Medical Association. As evidence of the fact we refer with pride to the large attendence of the profession and the interest manifested at this meeting. We recommend, as suggested by the president, that the Treasurer be instructed to draw by sight draft on members in arrears for their dues not later than July 1 after the meeting of the Association at which their dues are due and payable, and if payment is not made by September 1 next, that their names be dropped from the roll for non-payment of dues. We heartily and unconditionally indorse the action of our President in writing in his official capacity as president of the Texas State Medical Association to our representatives in Congress and the Senate of the United States calling their attention to the iniquities of the anti-vivisection bill pending in congress and urging upon them to use all legitimate means for the defeat of the same. We further indorse the president's recommendation that the Association in convention assembled take formal

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action in regard to this measure, which resolution shall be engrossed and copies forwarded to each representative.

B. Saunders, President Texas State Medical Association:

Your committee to whom was referred the annual report of the Secretary and the Treasurer, beg leave to report as follows: An examination of the Treasurer's report shows the same to be correct, and we recommend that it be received and adopted. The report of the Secretary we find correct and would recommend that it be received and adopted, and that the Secretary be instructed in future, as he suggests, to abstain from putting the name of any member of the profession resident of this State on the programme to read any paper or to participate in discussion who is not a member of the Association.

Respectfully,

P. C. COLEMAN,
W. R. BLAILOCK.
J. C. LOGGINS.

The Judicial Council also brought in a report in reference to the State Board of Health and the vital importance of such a board, and recommended the appointment of a special committee to report on same.

The report was adopted, and the President appointed the committee as follows: Drs. P. C. Coleman, J. C. Loggins and A. C. Scott.

Secretary West moved that a special committee be appointed to act on the recommendations contained in the President's message in regard to quarantine bills now pending before Congress. The motion was carried and the President named as such committee Drs. West, Sears and Wilson.

The President introduced Dr. Le Mond, of Denver, who in a very cordial manner invited the Texas doctors, on behalf of the State Medical Association of Colorado, to attend the annual meeting of the American Association, to be held June 7th, in Denver. He said that the meeting would be largely attended, but that the citizens of Denver had prepared for it, and they were anxious to have the Texas physicians in attendance. He requested that an estimate of the number who would be there be given him that rooms and hotel accommodations might be held

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for them. He added that two large hotels would not engage any more rooms until they heard from him: this was to see that the Texas contingent did not get left.

Dr. J. A. Mullen, of the Arrangement Committee, again invited all to attend the barge excursion, down the bayou to the battlefield of San Jacinto.

The Association then adjourned by suspending a certain clause of the By-Laws till 9 o'clock in the evening. Having returned from the excursion too late there was no night session.

THIRD DAY.—*Morning Session.*

Call to order at 9 o'clock by the President.

The Judicial Council reported favorably upon a number of names for membership. The report was adopted.

Dr. I. M. Cline, of Galveston, made a verbal report on behalf of the Committee on Medical Climatology of the State. After speaking about the matter in hand in a general way he recommended the appointment of a special committee to examine into the subjects named and report at the next meeting.

A motion was made by Dr. M. M. Smith, of Austin, that the report of Dr. Cline be accepted; that he be granted further time to make his report on the Climatology of Texas, and that the President appoint a committee of three to report at our next annual meeting on the Mineral Springs of Texas. The motion carried, and the President appointed on that committee Drs. H. A. West, of Galveston, R. T. Morris, of Houston, and T. J. Bennett, of Austin.

Dr. Wilson next read the following amendment to the By-Laws:

Art. XVII. The foregoing Constitution and By-Laws shall not be altered or amended, except when said amendment is offered in writing

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at a regular meeting, laid over until the next regular meeting and be adopted by two-thirds of the votes cast.

The amendment was adopted.

He also read the following resolutions:

"*Resolved*, That there shall be a special time set aside at one of the general sessions at each meeting to listen to reports of delegates from county societies, when they will be requested to bring in their reports."

Resolution carried.

"WHEREAS, There is now pending in the United States Senate a bill called 'Senate Bill No. 1063, Entitled An Act, for Prevention of Cruelty to Animals in the District of Columbia,' which refers to the experimentation upon animals, and is called the anti-vivisection bill; and

"WHEREAS, There is in the District of Columbia already in force a law for the ample protection of animals; and

"WHEREAS, This bill, if it should become a law, would quickly affect not only the District of Columbia, but this entire country, and would inflict serious injury upon biological science and the progress of scientific medicine in this country; therefore be it

"*Resolved*, By the Texas State Medical Association, in regular annual convention assembled, that there is absolutely no necessity for the passage of such a bill, and that this Association does most solemnly protest against its passage.

"*Resolved*, That our Senators and Representatives in Congress be respectfully petitioned by this body to vote against and use their influence to prevent this bill from becoming a law.

"*Resolved*, That the Secretary transmit a copy of these preambles and resolutions to each one of our Senators and Representatives in Congress."

Adopted unanimously.

The Judicial Council next brought in a communication from Dr. Chas. L. Gwyn, together with some other reports and recommendations.

"*Mr. President and Members of the Texas State Medical Association:*

"WHEREAS, I was appointed Chairman of Section on Obstetrics and Diseases of Children, and from malice on the part of the Secretary,

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my name was omitted from the programme; I hereby ask the Judicial Council to investigate this matter and see that justice is done me in this matter. Respectfully,

"CHAS. L. GWYN, M. D."

The Judicial Council submitted the following in relation to above matter.

The Judicial Council having investigated the charge of malice on the part of Dr. West against Dr. Gwyn, find that the action of Dr. West was in accord with the laws of the Association inasmuch as Dr. Gwyn was a dropped member of the Texas State Medical Association for non-payment of dues, and has only reinstated himself under the laws of the Association at this present meeting, and could not be an officer of this Association until such reinstatement was perfected under the conditions prescribed by the Association. We also find that Dr. West should have included Dr. Hadra in the same action, inasmuch as he was a dropped member in the same category.

The Secretary explained that his failure to notify Dr. Hadra, that it was necessary to reinstate himself, was an unintentional oversight, as he had no authority to place the name of any man in the list of officers who was not a member of the Association.

The Judicial Council also recommended the following:

WHEREAS, There are but six survivors of the charter members of the Texas State Medical Association, viz: Drs. D. R. Wallace, D. F. Stuart, J. H. Sears, T. J. Heard, R. J. Flewellen and R. H Jones, who have faithfully maintained the high standard of medicine, that they be elected honorary members of the Association as a testamonial of the high appreciation of their noble work and performance of duty.

Adopted.

On motion the Chairman appointed the following committee to look into the occupation tax question: R. W. Knox, Chairman, Houston; S. R. Burroughs and W. T. Evans.

A contribution was taken up for the Rush Monument fund. The amount collected, $37.50, forwarded by the Secretary to the treasurer of the fund with names of donors.

Section work resumed.

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SECTION ON SURGERY.

Dr. Hadra in the chair.

Dr. C. A. Smith whose name appeared next on the program was not present to present his paper, so the Chairman passed on to the reading of the next paper.

Entitled "Surgical Treatment of Empyema, etc.," was read by Dr. Shearer, of Wallisville, which, after being received and discussed, was referred the Publishing Committee.

The authors of the next two papers not being present, the reading of same was deferred to another time.

Dr. W. R. Blailock read a paper "Report of Two Cases of Appendicitis," which was received and after discussion referred to the Publishing Committee.

Next came the reading of a paper by Dr. A. C. Scott, of Temple, "Of a Surgical Case of a Gun-Shot Wound in the Abdomen, Necessitating the Removal of Fourteen Inches of the Intestines." Same was received with thanks and referred to the Publishing Committee.

This closed the Section on Surgery.

The next Section taken up was that of State Medicine and Public Hygiene. Dr. Blailock was appointed chairman in the absence of Dr. S. F. White, of Terrell. None of the authors of the papers named in the Section were present, however, and the Section on Gynecology was taken up.

First came the report of the Chairman, Dr. H. K. Leake, of Dallas, his report was duly received and referred to the Publishing Committee.

Next came a paper by Dr. S. M. Jenkins, on "Surgical Treatment of Retrodisplacement of the Uterus—Report of Cases." It was received and after discussion, referred to the Publishing Committee.

The next paper to be read was one by Dr. B. F. Kingsley, on "Operation for Removal of Right Tube, Ovary and Appendix." He was not present, but he had sent his paper, which was read by Dr. H. A. West, of Galveston. It was, on motion, received and referred to the Publishing Committee.

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A paper was next presented by Dr. A. C. Scott, "Restitution of the Perineal Body." Same was received, discussed and referred to the proper committee.

Before the close of the morning session the committee on the occupation tax, handed in the following report:

To the President and Members of the Texas State Medical Association:

We, your committee appointed to consider and report upon the communication received by this body from a committee appointed at a mass meeting held by representative physicians of the State in the city of Dallas in December, 1897, in regard to repealing the occupation tax imposed upon our profession by the 25th Legislature.

We respectfully represent that we have had under careful consideration the subjective matter of said communication, and beg to report as follows:

We find this committee have already entered heartily into the work assigned them, and at their own expense have prepared and had printed 1952 circular letters and posted them to physicians throughout the State appealing for funds to enable it to inaugurate and prosecute a vigorous campaign to the end, that this obnoxious piece of legislation may be taken from the Statutes of our State by action of the 26th Legislature.

We find from figures submitted that the Committee has paid out $54.44 as a total of expenses to date, and have received from various sources contributions to the amount of $15.50, leaving a balance of personal expense on the part of the Committee of $39.94.

Therefore, we recommend that this Association endorse the action of the mass meeting held at Dallas and the good work already accomplished by that Committee.

M. D. KNOX,
W. T. EVANS,
S. R. BURROUGHS,
Committee.

The above report was adopted by the Association.

The meeting adjourned until 2 o'clock.

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THIRD DAY.—*Afternoon Session.*

Call to order by the President.

First came the organization of the Nominating Committee as follows:

First District.—J. W. Scott, Houston.
Second District.—S. E. Ford, Nacagdoches.
Third District.—Joe Becton, Greenville.
Fourth District.—J. M. Fort, Paris.
Fifth District.—R. F. Miller, Sherman.
Sixth District.—J. C. Loggins, Ennis.
Seventh District.—A. C. Scott, Temple.
Eighth District.—C. S. Bobo, Weatherford.
Ninth District.—M. M. Smith, Austin.
Tenth District.—I. E. Clark, Schulenburg.
Eleventh District.—Thomas G. Duncan, Victoria.
Twelfth District.—B. E. Hadra, San Antonio.
Thirteenth District.—P. C. Coleman, Colorado.

The Committee on organization of Medical Societies brought in the following report, which, on motion, was adopted:

To the President and the Members of the Texas State Medical Association:

GENTLEMEN:—In the absence of the Secretary of the Committee on Organization of Medical Societies I desire to submit the following very brief report:

On account of the removal of the Secretary of this committee from the State the work of the committee has been very much hampered, and the report herewith submitted is a very incomplete one. I regret that I am unable to submit to this body a full report of all that the committee has accomplished and the full number of the new Medical Societies which have been organized in this State during the past twelve nonths, but only a few of them have been reported to me. The following is the list of those which come to my knowledge:

Brenham Medical Society, Dr. J. B. York, Sec., Brenham, Texas; Lavaca County Medical Society, Dr. C. H. Breuer, Sec., Hallettsville, Texas; Bell County Association of Physicians and Surgeons, Dr. W.

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T. Davidson, Sec , Belton, Texas; Hays County Medical Society, Dr. J. Angus Gillis, President, Buda, Texas.

Some of these organizations have expressed a desire to affiliate with the Texas State Medical Association but will perhaps be deterred from doing so by the law of the latter requiring them to pay an initiation fee. So far as I have been able to get expressions from the members of our committee, it is their opinion that the local societies should not be required to pay to the State Association either an initiation fee or annual dues, and this committee recommends that the law for this tax be repealed. Until we can show greater benefits to the local society from its affiliation with the State Association they will not pay an initiation fee in order to become affiliated, neither will they pay annual dues, and the result of the present law will be to drive all these local societies from the State Association.

The committee further asks that the Secretary of the State Association appoint another member to serve on the Committee in place of Dr. E. A Woldert, who has removed from the State.

Respectfully submitted,

S. E. HUDSON, M. D , Chairman of Committee.

To the President and Members of the Texas State Medical Association:

GENTLEMEN:—Your committee appointed to consider and report on the report of the "Committee on Organization of Medical Societies' beg to represent that they have had under consideration said report, and ask to submit the following:

We respectfully recommend that that section of the By-Laws requiring an initiation fee to be paid by medical societies be repealed.

Respectfully submitted,

M. K. KNOX,
S. C. RED,
S. R. BURROUGHS.

Dr. M. M. Smith offered the following resolution, which was laid on the table:

"That the President appoint a committee of five to report as to the best method of publishing the transactions of this Association whether they be journalized, as the American Medical Association and that said committee report at next annual meeting."

The committee, consisting of Drs. J. T. Wilson, M. M. Smith and S. E. Hudson, who were appointed by the President

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to prepare an address relative to the medical bill, submitted the following:

"Recommending that a committee of three be appointed to prepare an address fully explaining the true nature and purport of the bill, its scope and provisions. The total inadequacy of the present law and its unholy prostitution in many instances. The address to be published in circular form, 500 copies to be furnished the Legislative Committee, and the balance to be turned over to the Canvassing Committee to be distributed to the profession of the State, in order that they may be able to explain it to the candidates and members-elect of the Legislature."

The President named Drs. Wilson, M. M. Smith and Hudson to form this committee.

Also a committee of five be appointed who would canvass the State by correspondence with such physicians whose names they can obtain of each county, enlist their services, through them the services of the entire profession of the State, if possible. If one or two physicians of each county will take an interest in the bill they can easily enlist the services of the members of the profession in the counties in which they live, whether members of the Association or not. The physicians of the counties can bring the matter before the candidates or members-elect, of the Constitution, and whenever the promise of candidate to support the bill can be obtained, they should send the name of such candidate to the chairman of the Canvassing Committee, who shall keep a list of all members who promise to support the bill, and also of those who decline to support it, and the county from which they are sent, which list shall be turned over to the Legislative Committee.

The President appointed on this committee Drs. T. J. Bennett, J. C. Anderson, P. C. Coleman, W. R. Blailock and J. M. Frazier.

The report was adopted and the chairman authorized to draw for the necessary expenses on the Treasurer through the Secretary.

This finished the business for the present, so section work was resumed.

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SECTION ON GYNECOLOGY.

Dr. Leake, as chairman, presided over this section, with Dr. C. M. Alexander as Secretary.

Dr. J. D. Becton, of Greenville, read a "Report of a Case of Vicarious Menstruation," which went to the Publishing Committee without discussion.

Secretary West next presented a paper from Dr. Thomas Moore Madden, of Dublin, Ireland, an honorary member of the Association, remarking that Dr. Madden proved his appreciation of membership in the Association by his works, for the transactions had been repeatedly enriched by his valuable and original contributions. It was received with thanks and referred to the Publishing Committee.

THIRD DAY.—*Afternoon Session.*

SECTION ON OPHTHALMOLOGY AND OTOLOGY.

First came the report of the Chairman, Dr. R. F. Miller, of Sherman. Same was received and referred to the Publishing Committee.

Under this Section Dr. S. L. Terrell acted as Secretary.

Then came the reading of Dr. Thompson's paper, "Early Operation in Pterygium," which was received and after some discussion referred to the Publishing Committee.

Dr. Terrell next read his paper on "Some Ophthamological Don'ts". Same was received, opened for discussion, and finally referred to the Publishing Committee.

At this juncture Dr. Hulen having arrived proceeded to read his paper entitled "The Relation of our Section to the State Medical Association." It was duly received and after discussion was referred to the Publishing Committee.

A paper on "Supra-renal Capsule Extract as an Adjuvant to Cocaine in Minor Operations on the Eye and its Appendages,"

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was next presented by Dr. J. A. Mullen. It was received and after a great deal of discussion was referred to the Publishing Committee.

Dr. R. H. Chilton not being present to read his paper on "Glaucoma—Report of a Case," but as same had been sent it was read by the Secretary, Dr. S. L. Terrell. Same was received and referred to the Publishing Committee without discussion.

A paper entitled "Superficial Keratitis—Malaria as an Aetiological Factor" was next read by Dr. F. D. Boyd, of Fort Worth. It was received and after discussion was referred to the Publishing Committee.

The Judicial Council reported favorably on a number of applicants for membership, who were duly elected.

After this came the reading of "The Evolution of the Artificial Pupil," by Dr. Daviss. The Chairman called on Dr. Minnie C. Archer to discuss this paper, but she declined on the grounds that she was a very recent addition to the membership of the Association and would defer discussions until another time. Paper was referred to the Publishing Committee.

The next four numbers on the programme were not read as authors were not present; they were referred, by caption, to the Publishing Committee.

Dr. LeMond then read a paper on "Transplantation of the Rabbit's Cornea to the Eye of Man." This elicited a good deal of discussion, after which the paper was referred to the Publishing Committee.

The Judicial Council here made a report on membership which was adopted.

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AFTERNOON SESSION.—*Third Day.*

SECTION ON OBSTETRICS AND DISEASES OF CHILDREN.

There being no Chairman for this Section, Dr. T. L. Kennedy, Secretary, took the chair and Dr. J. E. Gilcreest, of Gainesville, acted as Secretary. Dr. Kennedy then proceeded to read his report, which was received and referred to the Publishing Committee.

Dr. W. F. Starley, of Galveston, was next on the program for a paper on "Eclampsia—Etiology," but not being present his paper was, on motion, laid over.

A paper entitled "Symptoms" in Eclampsia was read by Dr. T. W. Shearer, of Wallisville. Same was received and after being discussed was referred to the Publishing Committee.

Dr. Hulen not being present to read his paper on "The Eye Symptoms," in relation to Eclampsia, Dr. W. R. Blailock presented one on "Treatment." The paper was received, discussed and finally referred to the Publishing Committee.

The Judicial Council brought in a report for membership, which was duly adopted by the Association.

The meeting then adjourned until 9 o'clock that night.

THIRD DAY. – *Night Session.*

The President delivered his annual address, as follows:

THE PRESIDENT'S ADDRESS.—BACON SAUNDERS, FORT WORTH.

Ladies and Gentlemen:

In obedience to the organic law of this Association, I appear before you tonight. This law has been honored and made the more binding on me by its observance by the long line of my predecessors in office,

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from the founding of our State Medical Association, now nearly thirty years ago. Among these are names that have made much of the honor and glory in the history of this commonwealth from the days of the Republic down to the present. It is meet and proper then that I, their humble successor in office, should follow, feebly and faltering, though it may be, in the path of duty made luminous by the footprints of these fathers of Texas medicine, many of whom, though long since gone from among us, we yet and will ever delight to reverence. Grand old soldiers of the days gone by, may your rest be sweet "over the river under the shade of the trees!"

It is expected that what is said on an occasion of this kind will be framed for non-professional hearers, and I am charged with the difficult duty of entertaining and, if possible, instructing you in some way not too directly connected with professional matters and at the same time not too far removed from them.

The public mind associates the doctor so intimately with his vocation that I imagine the bare mention of the name calls up visions of capsules, pills, powders and bottles labeled "Teaspoonful every hour," with bandages, scalpels and saws for a dark and forbidding background. I often wonder if they ever think of him as simply a man, and frequently a most ordinary man at that, differing from themselves in no particular except of education and environment. I am fully persuaded that if the doctor and his patients saw more of one another—knew more of one another in a purely non-professional way it would be better for both. If the public could be made to understand the limits of our professional resources, could be made to see occasionally, even dimly, the boundary line beyond which the science of medicine has not lighted the pathway of its most ardent votary and much is dark as Erebus, the doctor's services would be easier to him and more satisfactory to them.

Have any of you in your experience ever heard doctors abused most severely for not doing something that was beyond the power of mortal man to do? This is not because of an innate desire to traduce the fair name of an honorable and capable physician. It is because of want of knowledge on the part of the public as to what the science of medicine offers in the way of cures for disease. You do not intend to asperse the fair name or impugn the capacity or skill of a faithful servant by demanding of him impossible duties. You do not demand of any other man on earth that he shall do miracles and perform wonders. You do not require others to do what they have never claimed the power to do. Why try the medical profession by some imaginary standard, the authority of which it has never acknowledged? The standards by which you measure individual attainments in other professions will not do to gauge the doctor by.

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We read in continental history of a body of patriots who called themselves "Minute Men." They would be called from the plow and the work shop and at a moment's warning were ready to march to the defense of their homes and firesides. Of all the professions the doctors are the only "minute men." You do not expect your minister, however learned he may be in Biblical lore, to do miracles; nor your lawyer, though he be versed in every principle of law from Moses down to the last legislative enactment, to go beyond these and draw from some unknown, unheard of source, principles of law unproven, and thereby accomplish the impossible. If not in these, why in the other? I simply ask for the medical profession that your arraignment of it be in accordance with the science it professes and not by the "stuff that dreams are made of." Have you ever thought how different is the knowledge the doctor must have of his profession from that required by the exigencies of any other? Did you ever contrast for even a moment the demands you make on him with what you ask at the hands of others? I am afraid not. Indeed, it is almost natural that you should not, unless you have given the matter careful thought.

The minister selects his topic for a sermon. He studies the text in the original, looks up the meaning of every word and phrase in the Greek, Latin and Hebrew lexicons; finds the opinions of all the commentators; investigates the questions involved in the light of history, both sacred and profane in fact, calls to his aid everything said and written in ancient, medieval and modern times in Biblical literature, history, music, poetry and art. Small wonder is it that the result is a masterpiece in pulpit oratory that moves the devout to tears and sinners to repentance. He has done but his simple duty in calling upon all the resources at his command and bringing them to bear on the end to be accomplished.

You submit to your most erudite counselor at law a legal proposition and he tells you to call again for an opinion. He forthwith retires to his "inner chamber" and begins to consult authorities and hunt up court decisions and National, State and municipal, commercial and corporation law, until on your return he reads to you a typewritten opinion that is a gem of classical thought and a perfect monument of legal lore. Even the most worthy and learned judge on the bench takes a case under advisement, I am told, when involving particularly intricate points of law.

This is right and proper, and certainly worthy of all commendation. It is not that we object to this course on the part of the minister, lawyer or judge, but we do claim that if the doctor shows, it may be a little hesitancy or a little less familiarity at the moment with a peculiar phase of disease, than they do with the difficult problems pre-

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sented to them, it does not necessarily convict him of a want of ability, industry and integrity. No human being could desire anything with a keener anxiety than the doctor longs for the opportunity to study his text, to look up his case, to consult authorities and precedents before giving an opinion or instituting treatment. But no, the angel of death is passing his way and will not stay his remorseless hand while the doctor studies the map of his itinerary and speculates on the stops he will make.

Our friends, the lawyers, sometimes try to twit even a good, honest, well-informed doctor because he can not answer offhand and definitely every question that their ingenuity has enabled them to devise about a case in court of which the doctor never heard before. It is just possible that some of them do this and then go outside and make disparaging and damaging remarks as to the character and attainments of the doctor, under such circumstances. Shame on such generosity!

If the well equipped doctor had the same opportunity for case-cramming that the lawyer has, he would know everything that has been said or written on the subject from the days of Galen to this good hour. We are apt under such circumstances to forget that the doctor in making up his verdict has to deal not alone with the "human frame divine" in all its composite phases, but with that other principle of our existence which we call life, that part of us about which the ingenuity of man has been able to learn so little, that unknown and, I was about to say, unknowable part of us. If the science of medicine were a matter of divine revelation like religion, or of custom, usage and precedent like the law; or if it were susceptible of mathematical demonstration like astronomy; or if there did not enter into its calculations and dominate all its conclusions this same subtile, intangible, ethereal force that we call life—ever present, yet forever evading the touch of the most skillful hand, never entering the visual circle of the keenest eye, nor making a sound audible to the acutest ear—then the doctor, if as well prepared as he ought to be, should always give a categorical answer to all questions propounded to him.

He would then be able to tell, for instance, just why, when two persons are exposed to the same contagion of smallpox, one has a light case and is soon well while the other has a severe case and dies in a few days. It does not explain to say that one has less vitality to resist disease than the other. "See the lilies, how they grow!" When you tell me in just so many words what the life principle is that makes them grow, by the same token I will tell you what it is that enables one to resist disease and without which another succumbs to it.

When that milennial day of human knowledge comes the doctors of our beloved Southland can tell you with unfailing precision where and at what hour the pestilential scourge of yellow fever will visit

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our coast States. When that delightful day shall dawn our own Texas doctors will know Yellow Jack when they see him and will not have to be introduced.

But I did not intend to jest—so much in the hope that I may help you never to forget that all questions of human health and life involve principles that are a part of life itself, as universal as humanity and as broad and deep as eternity.

Do you say that medicine is not a perfect science? It will never be perfected until the human race ceases to change its physical conditions, until its mental, moral and social environments are forever the same. The manifestations of disease are as various as the changing conditions of the human race. To hear a great many talk, one would think that the medical profession is the only one on earth that had not absolutely positive knowledge of everything in connection with its business. You say doctors differ. Well, what of it? Do all others agree? Are all other departments of human knowledge perfect and complete? Cotton grows in Dixie, but not in New England. We say the climate and soil are suited to it in one place and not in the other. Yet when the doctors make the same explanation for the different manifestations of disease under different circumstances, you laugh them to scorn and say that medicine is no science—anybody can be a doctor. There never were two cases of disease exactly the counterpart of each other any more than there have ever budded and bloomed two roses precisely alike in all the gardens of the universe. Generically they may be the same, but individually they are varied by the separate life in each.

If then these things are as they are; if no man can sit down and reason out a knowledge of medicine and disease; if it has not yet and probably never will be written for him on tables of stone and handed down to him from some holy mount in inspired revelation; if no man has in the past or will in the future be able to think up or originate a system of medicine, but on the contrary the science of medicine is now and must ever be a system of accurately observed and faithfully recorded truths, what should be the duty of the public toward it?

Be sure of one thing now and always—the real doctor is not a pretender to any knowledge or power that he does not possess. He claims no miraculous power or magic touch. He knows not the hiding place of the philosopher's stone, nor has he discovered the source of the fountain of perpetual youth. He knows that it is appointed unto all men to die, and that they will continue to fill the appointment until Gabriel blows his horn, in spite of all the doctors in Christendom. This is not for want of skill on the part of the doctor, but because of the natural limitation of human existence and the circumscribed power of the human intellect to fathom the mystery of human life.

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Public opinion to the contrary; it rarely happens, except in great emergencies, that a life is lost because Dr. "So-and-So" was not called in time. Under most circumstances, beware of the doctor that could have saved the patient if he had been there fifteen minutes earlier.

It appears to me to be clearly the duty of the public to guard jealously the portals of the medical profession, to see that all who enter there are fitted by nature and prepared by mental training that will enable them not only to acquire what others have known, but by patient work to add to the knowledge and skill of the profession. On account of this we live on a higher plane of usefulness than our fathers, and if we do the full measure of our duty those who come after us will compass things that have not been thought of in the wildest flights of the imagination. See to it, then, my friends, that the standard of medicine in your State is so exalted that incompetents from any cause, no matter what, will not attempt to enter its sacred precincts.

More people, perhaps, than most of you are aware of are tainted with the idea—as the story goes—that if the son of a family is too mean to be a preacher, not smart enough for a lawyer and too lazy to follow a business life, he is therefore good material out of which to manufacture a doctor. It is probable if those who enter the study of medicine now, at the close of the century, are prepared to take up the investigation of subjects now being carried on by hosts of capable workers all over the world, the first decade of the coming century will see more brilliant achievements in medical knowledge than the world has seen from the beginning of the science up to this time. What we have accomplished hitherto will seem as the first streaks of dawn that are the heralds of the coming of the kind of day in all his noontide glory. Can a brighter hope or nobler object stimulate the zeal and fire the ambition of man than this?

Encourage every doctor to work with this hope, and when those that are striving now fall in the fight and are laid to rest with the fathers, see to it that those who come after them are better equipped to take up the armor where they lay it down.

What a glorious vision to think that the time may come in the history of the world when my profession will have so perfected its knowledge of life in all its vicissitudes, learned so well the laws of all disease as to banish it from among men, and there will be no pain, no sickness, no death, but even as the ripened, mellow fruit falls back to mother earth, simple decay will terminate the cycle of perfect life.

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The orator, Dr. I. N. Suttle, of Corsicana, delivered the following address:

Mr. President, Members of the Association, Ladies and Gentlemen:

To be selected to deliver an oration before such a learned and honorable body as the Texas State Medical Association, is an honor of which any man might well be proud; but at the same time a task which abler and more eloquent men than I might hesitate to undertake.

Had I the pungent wit and sparkling humor of Oliver Wendell Holmes, the familiar autocrat of the breakfast table, I might hope to entertain you with success.

Were I blessed with the glowing fancy and eloquent tongue of our own McReynolds, or did I possess the diction of our distinguished president, I might approach this duty with a feeling of less trepidation.

Your kind indulgence which conferred this honor upon me, and which I hope will be continued as you listen to my remarks on this occasion, is my only plea to offset my own insufficiency.

When the Savior of mankind left his high estate and walked on earth amid the sons of men healing their infirmities, and curing their diseases, he hallowed and glorified the physician's profession.

And from that good day to this the story of the lives of the world's physicians glow with deeds of patient self-sacrifice and heroic devotion to duty, and blaze resplendent with glorious achievements for the benefit of humanity.

The true physician is always a philanthropist. Even in its crudest form the science of medicine has in it something of the divine.

No profession has a more sublime human ideal than ours. None comes closer to the daily evolution of providence. None touches the individual and social happiness of men at so many points. The history of the world's benefactors is replete with the names and deeds of men of our profession, whose names and achievements shine as bright luminaries in the galaxy of the world's greatest and most glorious men.

How much has the immortal Jenner done toward furnishing a prophylactic in the treatment of smallpox! What a potent remedy mankind finds in vaccination toward mitigating the severity of that dreaded and loathsome disease. The remedy discovered by Jenner, and its efficacy established by being perfected, and practically applied by the medical profession for more than a hundred years, stands unquestioned as one of the greatest blessings discovered by man.

What a blessing Sir Jos. Lister conferred upon suffering humanity, by giving to us the art and science of antiseptic surgery.

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A few years ago the abdominal cavity was like unto an unexplored cavern. Each effort to enter this unfrequented region for relieving injury or repairing damage to the internal organs met with failure, and the operator could number one more unfortunate who had "gone to that bourne from whence no traveler returns."

Today this cavity is entered by means of the surgeon's scalpel without fear or hesitation. The surgeon does not even hesitate to enter the abdomen for exploratory purposes, so secure from danger are his efforts protected by asepsis and antisepsis.

What greater boon was ever conferred upon mankind than that discovered by Drs. Long, Morton and Simpson? Anæsthesia produced by ether and chloroform. The two angels who give to their beloved sleep. Under its influence the keen lancinating pain of the surgeon's knife is unfelt. The poor unfortunate whose limb is crushed by the wrecked train of cars, is placed upon the surgeon's operating table and after being rendered oblivious to surroundings, and freed from suffering for a while by ether or chloroform, he awakes from his dream to find the mangled member amputated, and the stump dressed.

The woman who for centuries felt that God intended her to suffer the throes of maternity, in "pain and sorrow," today thanks her Maker that He has created a physician, whose inborn philanthropy, has stimulated him to the invention of an agent which wraps her throbbing nerves of pain in the soft robes of dreams.

Who is that burns the midnight lamp till the gray skirts in the eastern horizon announce the approach of day, experimenting toward devising means to shorten the ills of mankind?

Who are the vivisectionists? How much hardship and patient labor do they endure? How much contumely and unbribled audacity from the tongues and pens of the anti-vivisectionists do they suffer? all for experimental purposes to humanity's cause.

Let us present our every day experience. See some good physician called to administer unto a sick woman. The messenger comes at night. Outside all is dark, except now and then, when the road through the woods is lighted up by the flashing lightning. 'Tis winter's wild birthnight. The uneasy wind moans with its sense of cold.

The sky is dark, and on the huddled, restless rustling leaves sifts down its sleet. Five or ten miles he must travel on horseback, for 'tis too stormy for his buggy. His guide becomes lost, and they wander for some time endeavoring to find the correct road and are thus delayed.

When they arrive at a log cabin, "clapboard roof and puncheon floor," the most abject conditions of poverty and want are visible. The

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physician finds an invalid husband, long a cripple from injury in the war, hovering over a few smoldering coals of fire.

In a cold corner of the one room hut, lies his wife suffering from acute pneumonia. The doctor prescribes not only medicines, but stimulants and nourishment as well, for which he pays himself, as these poor people have no money.

When the doctor returns to his home it is noon the next day. The following night the familiar "hello" is heard out in the darkness. The call is for the doctor to go to this same sufferer.

Exposure the previous night has caused him to feel indisposed and if he could he would refuse this summons; but he cannot, she is now his patient, and he has not the heart to refuse the poor woman's call to come and relieve her sufferings.

So he again visits her, and continues to do so day after day for eight or ten days, when he finds that his skill and remedies are of no avail. In her last hour he can only administer unto her something to numb the acuteness of her dying pain. This is one of the many cases with which every physician has met. Such deeds place the physician among the most noble of men.

'Tis my fortune to know a good man and an excellent physician, who was called to see a wayward young girl in her teens. She was healthy and strong when she fell from the protection of friends and loved ones. The gay giddy allurements of frivolity fascinated her; during her clandistine visit away from home she became seriously ill, and her friends felt that she needed the services of a physician which were obtained; but the skill of the good doctor could not check the rapid course of the disease. 'Twas not God's will that she should live. She elicited the fact from her physician that her recovery was doubtful; before she became unconscious she realized that she soon must face eternity. Then she asked the doctor to pray that her sins might be forgiven. And this physician then and there knelt and offered a fervent prayer to Heaven in behalf of the unfortunate girl.

Thus was manifested the spirit of the true physician.

This is the vocation which has Christlike men and women to fill it. Such are the deeds of men in one of the noblest professions under the heavens. Such are the deeds of men whose names shall live in the heart and memory of the world forever. Such are the deeds of those who have laid the hand of science on the brow of pain; the hand whose magic touch restores; who have defeated nature's self and forced her to preserve the lives of those she had labored to destroy.

A few years ago when the great epidemic of yellow fever was depopulating the cities of New Orleans, Memphis, Granada, and other cities of the south, there were a few who went from Texas to assist those suffering people. Their names should be written high on the

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monument built to record the names of heroes, to grow brighter and brighter throughout time. The names of those whom I remember are, Drs. Manning and Swearingen, the former sacrificed his life in the efforts he put forth to arrest the scourge. The latter is today the living hero of that epidemic, and is nobly and most efficiently serving Texas in the capacity of State Health Officer.

How numerous are the inventions the medical man has brought to his assistance in the alleviation of suffering humanity.

Much more could be said of their usefulness.

From the earliest valuable inventions, to those of today among which I mention, that of our late Dr. Jos. O'Dyer, who a few years ago invented the instrument for intubation, the far-reaching results of which quickly achieved for him an international reputation.

By this instrument the previous mortality of diphtheretic croup, was greatly reduced by one masterstroke; and thousands of fathers and mothers whose children were thus snatched from the jaws of death arose and called him blessed.

And, last but not least, among the long list of discoveries which the physician has toiled a lifetime to perfect, we mention with gladness, the new and potent remedy for the cure of diphtheria, antitoxine. Only a few years it has been tried by those who have established beyond question that it is a great remedy in lessening the morality of that malady, which is alike to the physician and parent, the most dreaded of all diseases which afflict childhood.

A profession like ours that is invested with the power of unequaled beneficence, that disdains all mystery, all prestige of authority, and all superstitious veneration for traditional dogmas, that asks for confidence on the sure basis of scientific knowledge, appropriates no discovery to selfish agrandizments, holds its resources as the gift of heaven open to the good of all mankind, and labors to imitate Him who nearly nineteen centuries ago healed the infirmaties of the multitude, that waited on His ministry of love and wisdom.

Such a profession should never falter in giving heed to its own instincts, never waver in strenuous and persistent exertions to elevate still higher its practical ideal and maintain her dignity.

In the language of Gov. Hastings delivered to the American Medical Association, let us repeat: the doctor's presence in the sick room is as welcome as the morning sunshine: his voice is a benediction, his touch is an inspiration, and his presence an emblem of security.

To him children turn, and the marks of pain are turned into expressions of love and confidence.

The angels revealed to him the secrets of their lives, and their hopes of the life hereafter.

Mothers forget their vigils of the night, in loving anticipation for

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the restoration of their revered or dear ones, or perhaps in contemplation of the inevitable, that the pathway to the tomb shall be strewn with roses in confidence of a Redeemer's love.

In the words of our honored guest, Dr. Jelks, let us conclude:

To the cultivation of true science, to the alleviation of human suffering, to the divine business of going about doing good, and to the leaving to our beloved profession something better and richer than we found is the goal toward which we should set our steadfast feet. The accomplishment of these aims implies on our part, a lifetime of laborious days, and nights devoid of ease, of unwearied patience, of constant mental and physical exertion; of utter self-abnegation.

The way is rugged but the reward sublime.

FOURTH DAY.—*Morning Session.*

Call to order at 9:15 by President Saunders.

The first business in order was the report of the Nominating Committee, as follows:

HOUSTON, TEXAS, April 29, 1898.

Mr. President and Gentlemen of the Association:

Your Nominating Committee beg leave to report to your Honorable body the following nominations:

For President—Drs. J. T. Wilson, of Sherman, and A. B. Gardner, of Bellville.

First Vice-President—Dr. J. M. Fort, of Paris.

Second Vice-President—Dr. Taylor Hudson, of Belton.

Third Vice-President—Dr. R. W. Knox, of Houston.

Judicial Council—Drs. G. T. Thomas, of Rogers; H. K. Leake, of Dallas; J. G. Duncan, of Victoria, and A. C. Scott, of Temple.

Orator—Dr. M. M. Smith, of Austin.

Publishing Committee—Drs. J. F. Y. Paine, Vard H. Hulen, and H. A. West, Galveston, ex-officio chairman.

Delegates to the American Medical Association—Drs. S. C. Red, Houston; J. M. Fort, Paris; J. W. Kaiser, Flatonia; F. O. Norris, Eagle Lake; P. C. Coleman, Colorado City; J. E. Gilcreest, Gainesville; B. F. Kingsley, San Antonio; S. E. Hudson, Austin; T. J. Wagley, Cleburne; H. A. West, Galveston; J. T. Wilson, Sherman; Bacon

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Saunders, Fort Worth; Allen J. Smith and G. H. Lee, Galveston; J. W. Miller, Hillsboro, and J. F. Y. Paine, Galveston.

It is further moved that the Secretary issue delegate certificates to any member of this Association who attends the American Association in Denver, Colorado.

Place of meeting for 1899—San Antonio.

Chairman of Committee of Arrangements—Dr. B. E. Hadra, of San Antonio.

Respectfully submitted,

J. C. LOGGINS, Chairman.

M. M. SMITH, Secretary.

The report was received and adopted, after which Dr. Gardner gracefully withdrew his name in favor of Dr. Wilson, and the latter was elected president by acclamation.

Then came the installment of the newly-elected officers.

Drs. J. D. Osborn and C. S. Bobo were elected to conduct the President-elect to the chair, and after introduction by Dr. Osborn, he spoke as follows:

"GENTLEMEN:—You have conferred on me the highest honor within the gift of this Association. Will you come to my aid and make me worthy of it? I hope you will, I would not be human if I did not feel honored, and from your human hearts you can in some measure know the appreciation I feel.

"Twenty years ago this very week I became a member of the Association, and have watched its course since then to the present time and have ever been loyal to its best interests, and I believe that the turning point for the Association has come and it will now go forward and do grander and nobler work.

"I beg you to rally around its standard, be true to its teachings and uphold its banner next year at San Antonio; let all gather together and get the best officers for the sections we have ever had, and let every member take pride in the scientific discussion of papers; we must have good papers, and we must see that they are read and discussed; that is the object of the Association.

"We meet here in the birthplace of this body; we have received unbounded hospitality from the doctors and the beautiful women of Houston and their charming daughters. In our hearts we appreciate such attention more than all others.

"We have visited the sacred ground where the banner of Texas liberty was unfurled from the Rio Grande to the Sabine and from the Red River to the Gulf.

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"Next year we go to the place where the modern heroes, Travis, Burke and Crockett sacrificed their lives for Texas independence. Let us go there prepared for the work that is before us. I want to tell you that no better place could have been chosen for the Association to meet than in the city of San Antonio—there we hear the music of the rippling waters of the blue San Antonio river and the clear, limpid stream of the San Pedro Springs, and listen to the music of the tinkling guitar and the sweet strains of the Æolian harp; we will also visit the place where the modern heroes sleep, and inspect the memorable Alamo. Let us assemble there in view of the sacredness of the ground.

"My heart is too full for words to express the volume of thanks it feels."

President Saunders addressed the President-elect and audience as follows:

Mr. President, permit me to present to you this emblem of authority (the gavel). It is with pride that I turn it over to such a bold and efficient officer. Please take charge of it. (To the audience): In retiring from my office as President, I want to thank the Association for their assistance during my term of office. I think the tide is coming in for the Texas State Medical Association and that it is on the road for the fulfillment of its noblest mission, and I congratulate you on your wise selection of a President who will safely steer our bark on its onward course to still grander and greater accomplishments.

Drs. S. C. Red and J. D. Becton were selected to conduct the Vice-President-elect to the chair.

Dr. Fort spoke as follows:

GENTLEMEN:—I am not a speech maker. I never made but two speeches in my life and they were to a woman each time. [Laughter.] But while I do not pretend to be a speaker, I want to say to you that I return you thanks for the honor I have just received at your hands and that I will feel proud in doing all that I can to advance the interests of the Association. My father landed me in Texas in the same year that the battle of San Jacinto was fought. When a boy I roamed over the fields where most of your cities and towns now stand. There were no cities, and there were few hamlets here then, for the Indians had pitched their tents in these places, and they hunted the buffalo and wild deer where the hum of business and industry now responds to the enterprise of our citizens. I remember how these savages—when

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the new moon came to light their footsteps to evil deeds of depredation and violence—used to prowl around and raid our little settlements, always doing crime and sometimes marking their trail with devastation and death. But the times are now changed. These places, once wild and almost entirely controlled by the red men, now blossom as the rose, and thriving towns, beautiful houses and beautiful women, make all things happy and lovely around us. Progress now lives and breathes in our midst, and I rejoice to know and feel that the medical profession steadily moves and keeps pace with the times.

Drs. M. D. Knox and P. C. Coleman presented the second Vice-President to the Association.

Dr. Hudson accepted the honor in a few well chosen remarks.

Drs. A. B. Gardner and W. A. Archer then escorted the third Vice-President, Dr. R. W. Knox, of Houston, who accepted with a few words of thanks.

The Committee on the State Board of Health then brought in the following report, which was adopted:

HOUSTON, April 29, 1898.

Dr. J. T. Wilson, President Texas State Medical Association:

Your committee to whom was referred the question of a State Board of Health, report that this is a subject, the vital importance of which is too apparent to every intelligent medical man to need any argument urging this Association to advocate before our State Legislature a bill creating a State Board of Health, empowered with such duties as are necessary for the general good and the protection of public health. To that end your committee recommend that this Association appoint a committee, consisting of Drs. R. H. Harrison, M. M. Smith, Bacon Saunders, J. D. Osborn and S. C. Red, to prepare a bill for the creation of a State Board of Health in Texas, with such power for collecting vital statistics, analyzing articles of commerce offered for sale in Texas for the consumption of her citizens as medicine, food and drink, and for all other duties properly belonging to a State Board of Health, and that said committee shall be known as the Legislative Committee No. 2, to urge upon our State Legislature the importance of enacting such law for the general welfare of the people of Texas, not only in protecting the public health against preventable infections or contagious disease, but also the hurtful effects of articles of medicine and food offered

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for sale to the public under false or fraudulent claims that should be exposed and condemned.

Respectfully,

P. C. COLEMAN,
J. C. LOGGINS,
A. C. SCOTT.

This ended the business of the Association for the present and Section work was taken up.

SECTION ON GENERAL MEDICINE.

Dr. Gardner in the chair; Dr. S. C. Red, of Houston, was made temporary Secretary.

Dr. M. M. Smith, of Austin, then read a paper, "Some Remarks Concerning Hypnotism." Same was received and referred to the Publishing Committee.

The next paper presented was by Dr. A. H. Schenk, of Kenney, on "The Course and Treatment of Myxœdema with Spontaneous Dislocation of the Hip Joint." It was received and after discussion referred to the Publishing Committee.

This was followed by a paper on "Hydrotherapy," read by Dr. J. H. McCracken. The paper was received and referred to the Publishing Committee.

SECTION ON MICROSCOPY.

Dr. Bramlet not being present, Dr. A. H. Schenk, of Kenney, was appointed Secretary.

Dr. Gammon then presented his report on "Bacteriology.' Same was received with thanks and after discussion was referred to the Publishing Committe.

Dr. H. A. West then submitted a report on the pending quarantine bills, which was adopted.

Your Committee appointed to take into consideration the bills pending in Congress relative to matters of public health and regulation of quarantine beg leave to report as follows:

WHEREAS, there exists an urgent necessity in these United States for the enactment of some law or laws whereby the present chaotic

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condition and conflict between municipal, state and interstate authorities regulating quarantine shall be prevented.

WHEREAS, this state of affairs has resulted in enormous and unnecessary restriction upon the commerce of the country and in unreasonable panic among the people.

WHEREAS, in all matters pertaining to the conservation of the life and health of the people we have failed to keep pace with the progressive enlightment of the age.

Resolved. 1. That we urge our representatives in Congress to use every possible exertion to effect legislation for the correction of the evils aforesaid.

2. That we prefer the passage of the Association or Spooner bill, as it is more comprehensive in scope and in our opinion makes better provisions for the co-operation of the various States of the Union.

3. If for any reason the Association bill can not be enacted we respectfully urge a compromise with the advocates of the Caffery bill to the end that the needed legislation may be accomplished.

4. In view of the existing war between the United States and Spain and the resultant increase of communication which will arise with Cuba, the necessity of more stringent measures for the prevention of pestilential disease becomes more imperative.

5. We believe that it is especialty incumbant upon our representatives to be active in these matters, as by our geographical and commercial relations with Cuba and climatic conditions of the gulf states we are especially liable to infection.

6. The Secretary is hereby authorized to send a copy of these resolutions to our representatives in the Senate and the House and to request their immediate and careful consideration of the same.

Respectfully submitted,

H. A. WEST, Galveston, Chairman.
J. T. WILSON, Sherman.
J. H. SEARS, Waco.

Dr. Hudson then read the following appointments of Section officers for next year, which were, on motion, adopted:

Section on General Medicines—Dr. G. H. Lee, Galveston, Chairman; Dr. W. F. Starley, Jr., Galveston, Secretary.

Section on Obstetrics and Diseases of Children—Dr. C. M. Alexander, Coleman, Chairman; Dr. J. M. Frazier, Belton, Secretary.

Section on Surgery—Dr. A. C. Scott, Temple, Chairman; Dr. Marvin Graves, Waco, Secretary.

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State Medicine and Public Hygiene—Dr. J. C. Erwin, McKinney, Chairman; Dr. J. O. McReynolds, Dallas, Secretary.

Section on Gynecology—Dr. A. N. Denton, Austin, Chairman; Dr. S. E. Hudson, Austin, Secretary.

Section on Ophthalmology—Dr. J. A. Mullen, Houston, Chairman; Dr. R. E. Moss, San Antonio, Secretary.

Committee on Neucrology—Dr. I. N. Suttle, Corsicana, Chairman; Dr. J. T. Bennett, Austin; Dr. G. T. Thomas, Rogers.

Surgery—Subject: "Extra Capsular Fracture of Hip Joint." Presentation, Dr. J. R. Nichols, Greenville. Discussion by Dr. I. E. Clark, Schulenburg.

State Medicine and Public Hygiene—Subject: "The Water Supply of Texas and Its Relation to the Cause of Diseases," presentation by Dr. W. M. Terrell, Farmer. Discussion by A. O. Scarborough, Schulenburg.

Gynecology—Subject: "The Proper Supports for Uterine Displacement." Presentation by Dr. J. W. Scott, Houston. Discussion by. Dr. F. Herff, Jr., San Antonio.

Ophthalmology—Subject: "The treatment of Granulated Lids." Presentation by Dr. F. D. Boyd, Fort Worth. Discussion by Dr. R. F. Miller, Sherman.

PART II. GENERAL MEDICINE.

"La Grippe—Etiology, Pathology, Diagnosis and Treatment." To present the subjects, Dr. J. E. Gilcreest, Gainesville. To open discussion, Dr. P. C. Coleman, Colorado City.

Obstetrics and Diseases of Children—Subject: "The Prophylactic Treatment of the Pregnant Woman." To present the subject, Dr. J. F. Y. Paine, Galveston. To open discussion, Dr. F. D. Thompson, Fort Worth.

A motion was made and carried that all papers appearing on the program which have not been read, be referred to the Publishing Committee.

The report of the Judicial Council, making all charter members of the Association honorary members was adopted.

President Wilson then vacated the chair to Vice-President Fort, and proposed the following resolutions, which were adopted:

WHEREAS, The great-hearted citizens of Houston have left the Texas State Medical Association under tender obligations for the personal hospitality it has received; and

WHEREAS, Our sessions here have been sweetened with the inspir-

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ing presence and benignant smiles of fair ladies, whose graceful personality always encourage the true physician to earnest endeavor; and

WHEREAS, The busy doctor who in his daily work is brought in constant contact with the sadder and darker side of life, needs and enjoys and appreciates such recreation and pleasant association in a greater degree than men who come from any other walk of life;

Resolved, That the Texas State Medical Association tenders its warmest thanks to the queenly matrons and maids of Houston, than whom there is no fairer in this fair land.

Resolved, That the members will go to their homes carrying with them sweet memories of their experiences at this meeting—tender memories walking to and fro, weaving garlands of immortelles and causing us in after times to turn with grateful hearts to the sunny days of April, 1898, passed by all of us in the enterprising city of Houston.

Resolved, That our sincere thanks be tendered the President, the Committee of Arrangements, the members of the profession of Houston, and her splendid citizens, for their magnificent entertainment of the Association at this meeting.

Resolved, That the Association appreciates with full measure our recognition by the railroad superintendents to a greater degree than they have hitherto done. We tender them our heartfelt thanks, and also to Mr. Van Vleck for a delightful excursion by special train to Clinton, and likewise to the Houston Electric Car Railway Company for a pleasant ride around the city.

Resolved, That our sincere thanks be tendered the reporters of the press, the Houston Post, the Herald, Galveston and Dallas News, for the reports of the proceedings of this meeting.

Resolved, That the thanks of this Association be and they are hereby tendered our President, Dr. Bacon Saunders, for his able and impartial administratson of the affairs of the Association; to Dr. H. A. West for the able performance of his arduous and difficult duties in a time of financial need; also to Dr. J. Larendon, Treasurer, and to the officers of the several sections for their able co-operation, all of which has culminated in one of the best meetings in the history of the Association.

Motion was made and carried to adjourn until the fourth Tuesday in April, 1899, the meeting to be held at San Antonio, Texas.

Approved: H. A. WEST, M. D., Secretary.

J. T. WILSON, M. D., President.

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PAPERS

READ BEFORE THE

THIRTIETH ANNUAL MEETING

OF

The Texas State Medical Association,

HELD AT

HOUSTON, TEXAS,

April 26th, 27th, 28th, and 29th, 1898.

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SECTION ON GENERAL MEDICINE.

CHAIRMAN'S ADDRESS.

WHAT SHALL WE DO WITH OUR CONSUMPTIVES?

A. B. GARDNER, M. D.,
BELLVILLE, TEXAS.

Gentlemen of the Association:

While looking over the vast field of general medicine with a view of making my report to you, as chairman of this Section, and considering the magnitude of the task,—together with the length of such a report, to be at all comprehensive; also considering that of necessity it would include mostly matter which is already familiar to most of you,—with these reasons before me, I shall offer no further apology for deviating from the customary rule of chairmen of Sections, and call your attention to a subject which, to my mind, is of the gravest importance to us, as both physicians and citizens. Not with the impression on my mind that I shall present anything new to you, but with the hope of arousing the profession to concert of action.

While perhaps it would come more appropriately under the Section of State Medicine, I shall take the liberty of presenting it here. The subject is, What shall we do with our consumptives?

Vital statistics credit to this one disease the cause of seven per cent of all deaths in the United States; and as 20 per cent die in infancy, which must be deducted to get the actual per centum of the mortality from this disease, we find it still greater.

The medical profession taught for centuries that tuberculosis was a hereditary diseases, and there is a general belief in

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that theory today among the public, and I am sorry to say, some of our profession are still clinging to that old dogma.

The discovery of the tuberculous bacilli by Prof. Koch, and his demonstration of the transmission of the disease by them, which has been verified by many other bacteriologists, so there no longer remains the least reason to doubt the truth of their researches—and to the observing physician, this needs no proof beyond his own experience.

How often have we seen tuberculous patients sleeping in the same apartments with members of the family, and often occupying the same bed! With no regard for perfect ventilation, they cough and expectorate their tuberculous sputa without the least attempt at disinfecting, or destroying the bacillus which are thrown off by the million daily in this sputa. And as they retain their vitality for a great while, becoming dried on the bedding, handkerchiefs and walls, carpets and clothing, and everything which furnishes a lodgment for them, from which, in the form of dust, they are inhaled, and the housewife innocently raises the dust by dusting and sweeping the rooms, little thinking that she is setting the germs of disease in motion, to be inhaled by all in the room.

They also enter the food in the same manner, and as the gastric juice has but little effect on the bacilli, they enter the system in this way, more frequently attacking children through this channel than older persons; in children the delicate mucous membrane of the intestines furnishes a favorable location, and the mesenteric glands soon become infected, and the tale is soon told.

Fortunate are those who escape these showers of bacillus contaminated dust; but it is not from our intelligence that we escape, but because the healthy secretions from our air passages are bacillicide in character, and therefore they are harmless.

But not so with those, who from some other cause have impaired pulmonary organs. They furnish a rich culture field for the propogation of the tuberculous bacillus, and there is another victim to this army of invasion. The progress may be slow for

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a season, but noiselessly yet continuously, they burrow and multiply, until from some other cause perhaps debilitates the system, and then the ravages of tuberculosis is observed, too late for help, and slowly but surely another victim is carried from us by the conquering host, which we, as doctors, have to admit we are unable to cope with. And while the victory is won, almost surely others have been infected with the bacillus, and we must soon see them fade as the spring flowers before the summer sun.

Still hoping when there is no hope, yet sowing the deadly germs among those they love best—and so the same drama is being repeated over and over again.

We must acknowledge we cannot cure tuberculosis, or if at all, only in its early stages, and then under the most favorable circumstances. While I have nothing new to offer as to the treatment of tuberculosis, or the prevention of infection by the bacillus, yet something should be done to prevent the spread of tuberculosis. This can only be done through the medical profession, and the only course which promises success, is the education of the people on this subject by the medical profession. They must be taught the true pathology of the disease, and their minds disabused of that old fallacy of heredity.

When the true cause of tuberculosis is known, and the danger of infection is realized, our battle will be won, consumption will then be regarded in its true light by the public, somewhat in the category of other contagious diseases. Then will the question arise, what shall we do with such cases? From all over the civilized world, from those most competent and who have given the subject most thought, the answer comes,—build sanatoriums for the tuberculous patients. Just what form, or how to be managed, is not my purpose to discuss, but to try to enlist this Association and the entire profession of the State in this cause.

When that is done, and the people are taught to realize the importance of it, something can be accomplished. For me to advocate this alone is but naught; alone I am but a single fiber with no strength. But as fibers are united to form the cable

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with which the huge ships are bound to shore, and withstand the force of winds and lashing waves, and with the cable we raise ponderous weights, and rear the marble shafts on high, so also is the strength of our profession when united. And here we can rear a monument to our profession which future generations will honor.

Dr. L. L. Flick, of Philadelphia, in discussing Dr. S. A. Knopf's paper on this subject, read before the American Health Association, said no hope of accomplishing great results could be looked for, until the public was educated as to the infectiousness of the disease. This education is going on, and in Philadelphia in the last ten years, there had been a reduction of the disease by one-third. Dr. Knopf in the paper just referred to, makes a strong plea for the sanatorium system for the care and treatment of tuberculosis, and he believes that segregation is the only real safeguard for their families. He further says that two distinguished Governors of New York and Pennsylania vetoed bills to establish sanatoriums for tuberculosis patients simply for the lack of information as to the true nature of the disease. He also says, educate the people on this subject, teach them the advantages of the sanatorium treatment where patients will have all the advantages of hygiene, desirable climate and all the comforts which such institutions afford.

Dr. Von Zeimssen, of Munich, in a paper read before the International Medical Congress at Moscow, says all the treatments for the cure of consumption have been discarded except two,—tuberculine and climatic. Of the former, he says Koch's old tuberculine has been forgotten, the value of the new has not been proven, and the most of us doubt its efficacy. Dr. Von Leyden, of Berlin, said, in discussing the paper of Prof. Zeimssen, that the tuberculine treatment had failed in his hands, and he did not believe there could be any success with tuberculine. The specific may come, but we can not wait for it. We must not look for the future, we are living in the present. The only treatment which has yielded any good results in his hands, is the climatic.

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Dr. Jarvine, of St. Petersburg, said, after listening to the greatest authority in Europe on the treatment of phthisis in sanatoriums, he thought there could be but little doubt left in the minds of those present, that this is the only mode of treatment. Dr. Vivant, of Monte Carlo, also read a paper at the same Congress, on the climatic treatment of tuberculosis. He says that the discovery of the tuberculous bacillus has taken nothing from the importance of climatic treatment of tuberculosis, and while the bacillus resists alike high and low temperature, so there is no climate with absolute immunity, there are several conditions necessary in the selection of a climate for such a sanatorium; first, an equitable climate; second, a dry and pure atmosphere containing plenty of oxygen, also free from fogs, high winds and dust, also with plenty of sunshine.

We have in the southwestern part of our own State all the desirable conditions, so far as climate is concerned, for an ideal sanatorium for the care and treatment of tuberculosis, and the question is, shall we utilize it? Our State government very properly expends large sums of money annually to prevent the introduction and spread of contagious diseases in the State. While more people die ten to one from tuberculosis in the State than all other contagious diseases combined, yet there is no effort made to check its ravages, and the fault is with our profession, and not with the government. We fail in our duty by not educating the people on this subject, and bringing them to realize the great need of such institutions, the benefits to be derived by those who have tuberculosis, and the safeguard afforded those who otherwise would of necessity be thrown with the effected.

Many of the European countries are realizing the importance of this question, and are erecting sanatoriums for the care of tuberculous patients, also some have been built in our Northern States, and all are yielding the most gratifying results.

Then shall Texas lag in this great work of humanity? Just what plan is best, or how to be conducted, I do not feel disposed to discuss here. When the public is alive to the great

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danger they are daily exposed by the present method of dealing with phthisis, then we as physicians will have only to show them the way, as we have done with other contagious diseases, and our object will be accomplished.

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THE DIFFERENTIAL DIAGNOSIS BETWEEN DENGUE AND YELLOW FEVER, WITH SOME ACCOUNT OF THE EPIDEMIC OF 1897 IN TEXAS.

H. A. WEST, M. D.,

GALVESTON, TEXAS.

The diagnosis of disease is universally and justly regarded as the foundation stone upon which rests the entire superstructure of practical medicine. The question concerns the health, life or death of the individual affected, his family and friends, the public in so far as he may be a useful and influential member of society, and the physician as affording a basis for his prognosis and treatment. But there are occasions when far more momentous interests are involved in the correct diagnosis of prevailing diseases: a complete paralysis of commerce, the wheels of industry arrested, enforced idleness with consequent poverty and suffering of thousands, enormous depreciation in property values of every kind, universal fear and panic, and the possibility of wide-spread death and desolation. To the physician himself an error in diagnosis ordinarily involves results which are comparatively inconsequential; on the other hand, there are times when such an error means public denunciation and disapprobation. A correct diagnosis, even when opposed to commercial interests, may involve him in losses of reputation and business which may last for a lifetime.

This was the state of affairs in Texas during the summer and autumn of 1897. So long as yellow fever was supposed to prevail east of the Mississippi only, and that dengue was the epidemic disease in Texas, peace reigned; but when the trouble came to our own doors by the announcement of yellow fever in Galveston and Houston, there came the contest over the question of diagnosis, with visits of local experts from city to city, the gradual passing of the epidemic with no record of deaths

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from yellow fever, and the popular conviction of a stupendous error committed by those who believed in the presence of that disease. The majority, both of physicians and laymen in the State are firm in the conviction that dengue was the disease which was prevalent in Texas during the past summer; a minority believe that yellow fever also prevailed, but that owing to its mild form, indisposition to spread, exceptionally small mortality and resemblance to dengue was usually unrecognized. Confusion has arisen in the minds of many. They ask themselves, "Are the land-marks all swept away? Have the authorities led us astray? Has a new disease, *anomalous dengue*, made its appearance? Is there no such thing as dengue? Is the so-called dengue a mild form of yellow fever? Does the latter arise de novo?"

The important issues dependent upon a knowledge and recognition of the truth upon these points render it not only pertinent but imperative upon the part of those who are familiar with the facts to study them in concert. Now that the obscuring mists due to commercialism, prejudice and passion, have for the most part passed away, we approach the subject from a scientific standpoint. It is with this end in view and in no spirit of dogmatism or self-assertion that I introduce the subject for consideration. The following hypotheses have been assumed in relation to the recent epidemic:

1. The disease was dengue only. There was no yellow fever in Galveston, Houston, or the State of Texas in 1897.

2. There were anomalous cases of dengue, presenting all the symptoms of yellow fever, but proven not to be that disease, by the indisposition to spread from numerous foci and the low mortality rate.

3. During the progress of an intense epidemic of dengue throughout the State, in Galveston, Houston, and possibly other places, yellow fever made its appearance, and in consequence of its mild form and resemblance to the prevalent disease was generally unrecognized.

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4. An imputed hypothesis that the epidemic of 1897 in Texas was yellow fever only.

5. A few cases terminating fatally, and others attended by marked jaundice and albuminuria were denominated acute infectious jaundice (Weil's disease).

In order to obtain definite information upon the subject, the following circular of inquiry was distributed to a limited extent. I regret very much that replies could not have been obtained from every infected place in the State, so as to have made the report an exhaustive one. The subjoined tabular statement will, I trust, afford sufficient data upon which to base some definite conclusions. Following is the circular of inquiry:

"It is my intention to prepare a paper upon the 'Differential Diagnosis between Dengue and Yellow Fever, with Some Account of the Epidemic in Texas in 1897,' to be read at the forthcoming meeting of the State Medical Association at Houston, and at the Denver meeting of the American Medical Association. If dengue prevailed in your community during the last season, you would oblige me very much by furnishing me with information upon the following points:

"1. Date of outbreak; rapidity of spread; probable proportion of population affected; duration of epidemic; any evidence as to its origin.

"2. Any unusual meteorologic influences, as excessive heat or precipitation; local hygienic conditions.

"3. Symptomotology: *a*. The eruption: The character of, and present in what proportion of cases. *b*. Glandular enlargements: What glands usually involved, and in what proportion of cases. *c*. Hemorrhages: In what proportion of cases and from what sources. *d*. Nausea and vomiting: Severity and comparative frequency of; dysenteric symptoms noted. *e*. Albuminuria: In how many instances examined for, proportion of cases found, large or small amount; any other characteristics of urine noted, daily quantity, color casts, blood, epithelial cells; any uræmic symptoms or other evidence of acute nephritis.

"4. Ratio of pulse to temperoture.

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"5. Jaundice, if noted, character of, and occurring in how many cases.

"6. Mortality, postmortem findings, if any.

"7. Did you have any reason to suspect the presence of yellow fever? If so, upon what evidence.

"8. Any difference in the severity as the epidemic progressed?

"As I am sending out but a limited number of these circulars, and the subject is of extreme interest and importance, a prompt and complete reply is requested."

Subjoined is a tabular statement of replies:

Data obtained from other localities are as follows: Gainesville, Cook County, on the extreme north central border, reporter Dr. J. E. Gilcreest, no epidemic, only a few sporadic cases of mild type, symptoms not noted. Terrell, Kaufman County, near northeast border; Dr. W. H. Monday reports no cases. Dr. J. T. Wilson, Sherman, Grayson County, north central border, no dengue. Dr. J. M. Neil, Bonham, Fannin County, in same district as above, no epidemic; saw but one case, which was contracted at Paris. Dr. T. J. Bell reports from Tyler, Smith County, East Central Texas, very mild epidemic, commencing 15th of October, spreading slowly and affecting a small number, no evidence as to origin, no rash in most cases; no hemorrhages, glandular involvement, dysenteric symptoms or jaundice noted; no deaths.

Dr. J. H. Barham, Nacogdoches, East Central; no epidemic, saw three cases only; one contracted dengue in Houston, two here, all in different families, no spread, eruptions in two, absent in one, nausea and vomiting in all; no tests for albumin; jaundice in all, well marked in one, moderate in one, slight in the other; suspected yellow fever in the case from Houston; all recovered.

Summarizing results obtained from the foregoing twenty observers in eighteen places, we find as follows:

The epidemic of dengue of 1897 prevailed chiefly in Southern Central Texas within a radius of 200 miles of Houston, but ex-

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	Mortality.	Progressive severity.	Remarks.
rved in tion of Oct. 1. onfined væ, in ce and in the	Does not believe there was a case of yellow fever in Galveston. The Wade case was the most Suspicious. Diagnosis, *acute infectious jaundice.* Death certificate signed uremia.	Distinctly noted; mild in the beginning, latter part of July and August. More severe in September and still more virulent in October.	Conclusion. The Wade case was not yellow fever because of survival beyond usual duration, intense nausea and protracted retching instead of easy vomiting; calm indifference to surroundings, lack of post mortem. evidence of fatty degen. of kidneys or liver and of hemorrhages.
l grade om first e skin, oticea- a very ht yel- e con-	Practically no mortality; one death in which dengue occurred as a complication of a previously existing interstitial nephritis. Does not believe there was any yellow fever in Galveston during the past season.	Not specially noted.	Temp. usually high in beginning, came (after slight remission) high again toward end of attack. Duration on average, 4 days; in mild cases 3, in 50 per cent. 5. Conjunctivæ usually mildly injected. Also hyperemia of face and neck. Neuralgic symptoms marked in 90 per cent. of cases in head, back and limbs.
d in 30	No deaths. Suspected yellow fever at first owing to jaundice, nausea and vomiting and temperature.	No difference in severity as epidemic progressed.	
	No mortality. Yellow fever not suspected.	Increased.	

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tending and prevalent to a limited extent 300 miles to the extreme northern border. San Antonio, Houston and Galveston, followed by Schulenburg and Navasota, appear to have been most intensely infected, the proportion of population in these places affected varying from 75 to 90 per cent. Belton, Palestine and Huntsville followed closely with a percentage of 60–65. In the extreme Northern and Eastern portions of the State, as in Gainesville, Sherman, Bonham, Terrell and Tyler, there were but a few sporadic cases. At Dallas and Paris a very mild epidemic, affecting not more than 6 per cent. of the population. San Antonio, Galveston and Houston seem to have been the centers of infection, as appears from the following statement. Palestine, a railroad center about 150 miles north of Houston and 200 miles northeast of San Antonio, with double daily train service. Dr. Link states the probable origin was from these two cities.

Dr. Tabor reports from Bryan, which is about 100 miles from Houston with direct rail connection, that both the first and second cases were persons who had been exposed in Houston. Dr. Thomason reports from Huntsville, about seventy miles north of Houston, with direct train service with the latter place and Galveston, that the first case was a young lady from Galveston, and that other foci of infection were soon developed by parties from Houston and Galveston. Austin's first case was a hotel clerk recently returned from San Antonio. Dr. Lee reports from Galveston that his first case, seen July 29, was from San Antonio.

The first two cases seen by the writer, August 11, were in the persons of young men who had returned to Galveston from the Interstate Drill at San Antonio. Schulenberg is about equidistant from Houston and San Antonio, and may have been infected from either. Navasota is only about seventy miles from Houston. The intensity of the disease at San Antonio, the presence of the militia companies, not only from numerous points in the State, but of States east of the Mississippi, the coincidence in time (latter part of July) of the return of the

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militia to their homes with the outbreak of the disease, and the positive identification of the first cases in several places in persons who had returned from the encampment, is evidence going to prove that San Antonio was the initial point of infection in the State. As to the origin of the disease in the latter city I have no means of tracing it, but can only say that ample opportunity for conveyance of dengue was afforded by the collection there from July 19 to 26 of troops and visitors from points east of the Mississippi where the disease had made its appearance.

Further confirmation is also afforded by the facts above cited that dengue is an infectious, a portable and contagious disease, *i. e.*, the specific micro-organism which produces it may escape from the body of an infected individual and be transmitted by persons and things to other persons, thus speedily multiplying foci of infection and accounting for the rapidity of its dissemination. The fact previously observed that the progress of the disease is arrested by the advent of cold weather or frost, has also been confirmed by the consensus of statements herein presented. As to the effects of meteorologic and hygienic conditions, the majority of observers describe the weather as excessively hot and dry. The mean daily temperature in Galveston was nearly 8 degrees hotter during the month of October, 1897, than in the previous three years, and the continuance of unusual hot weather in November and December was the subject of general comment. Local sanitary conditions do not appear to have played any important part in the propagation of the disease. Dr. Paschal, however, calls attention to the excessively insanitary condition of San Antonio at the time of the outbreak, and Dr. Tabor ascribes the comparative immunity in Bryan (only 100 cases out of a population of 4000) to the extraordinary precaution to better the sanitary condition of the town. In regard to the symptomatology, I have not attempted to obtain information as to the complete clinical history of the cases under consideration, but rather to determine the distinctive value of those symptoms which have heretofore been regarded as of great importance in the differentiation between

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dengue and yellow fever, viz., the presence of an eruption, hemorrhages, nausea and vomiting, evidence of an acute nephritis, as albuminuria, scantiness, presence of casts, uremia, divergent pulse and temperature, jaundice and mortality.

There is almost perfect unanimity upon the part of observers as to the presence of an eruption, the proportion with this symptom varying from 25 to 90 per cent; 75 per cent would be a fair average. It is variously described as miliary, scarlatiniform, rubeoloid, erythematous, reddish papules, macular dermatitis, urticarial desquamative, as localized upon the face and neck, upon the face and upper part of the body, with profuse perspiration, irregular as to time of appearance, coming on the second or fourth day, or end of the fever, hyperemia appearing on the first day. Dr. Peeples notes the fact that, while frequently absent in adults, an eruption was almost invariably present in children.

The consensus of opinion is that glandular involvement occurred to a very limited extent in this epidemic; the majority of observers not noting this symptom at all, but one observer mentioning enlargement of the cervical glands and tonsils in 25 per cent of the cases; another the connection between the enlargement of these glands and the rash; another observed swelling of parotids, sublingual, inguinal and suboccipital, especially in children; one observer noted enlargement of the submaxillary glands in 20 per cent of his cases.

Hemorrhages.—With but three exceptions every observer noted the occurrence of hemorrhages. The nose, throat, gums, stomach, intestines, uterus and kidneys were the chief sources mentioned. The percentage in which this symptom was present varied from 1 to 10 per cent. Three or four observed black vomit.

Nausea and vomiting were notable symptoms and occurred in a large proportion of cases, varying from 80 to 90 per cent; with but few exceptions it was described as severe, excessive, incessant, almost universal, etc.

Condition of the Urine.—Unfortunately, observations per-

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taining to the urine were made so infrequently and imperfectly as to render them of but little value. Most of the observers made no examination at all, a few examined for albumin only in the worst cases. Dr. Wilkinson, of Galveston, out of 500 cases, says he tested for albumin in many and found it absent; sp. grav. was generally high. Dr. Lee, Galveston, states he examined for albumin in fifty cases out of 490. Eight of these had previous kidney trouble; of the remaining forty-two, twenty showed slight albuminuria on the third and fourth days; and in six albumin was present in large amounts. Dr. J. M. Coble, Dallas, examined the urine in 25 per cent of his cases, and found slight albuminuria in 10 per cent. of them.

Drs. Wilson and Harris, of Navasota, only made urinary examinations toward end of the epidemic, in about fifty cases; in forty of these albumin was found in good quantity. The urine was diminished in quality and high colored; casts and blood cells found in three cases, and uremic symptoms in four. Dr. Taylor Hudson, Belton, tested the urine only in a few suspicious cases, and found albumin in several; the urine was usually dark and diminished; uremic symptoms pronounced in several. Dr. D. L. Peeples, Navasota, found albumin from slight trace to abundance, in some cases with almost total suppression, color varying from a deep straw to color of blood. Dr. R. R. Walker, Paris, found albumin in 25 per cent of his cases. Dr. W. W. Walker, Schulenberg, only tested for albumin in worst cases; found it in ten, in some in large amounts. The remainder of reporters failed to note condition of the urine.

If, however, dengue was the only disease prevalent, albuminuria is not the rare symptom in that disease, as heretofore has been the opinion.

Ratio of Pulse to Temperature.—Ten out of sixteen observers mention that the pulse was abnormally slow in proportion to the pyrexia; three state the ratio normal, and three made no note of the symptom.

Jaundice.—Four reporters mention this symptom as present in about 7 per cent; one, Dr. Wilkinson, Galveston, mentions

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jaundice as being of frequent occurrence and of severe grade after October 1. One notes it as generally present of mild grade; another states it was mild in 10 per cent and severe in 2 to 5 per cent; one found it more or less present, and seven failed to note icterus at all.

Mortality.—There is almost perfect unanimity as to want of mortality in the recent epidemic, the few deaths occurring were usually ascribed to some complication. As regards progressive severity a majority state there was no marked difference; a few assert aggravation in the beginning and in the midst of the epidemic. Dr. Wilkinson notes mildness in August, increased severity in September, progressing to violence in October. Only two or three out of the twenty suspected the presence of yellow fever. As to the early symptoms: The onset was usually sudden, attended by slight rigors or chilly sensations with more or less severe headache and pains in the back, limbs and joints. As regards the paroxysm there is a remarkable discrepancy in the statements of Drs. Lee and Wilkinson, each of whom treated about five hundred cases. Dr. W. (I quote his exact language) states: "The fever in all my observations contained but one single paroxysm; there was no secondary fever from first to last; it departed by lysis, three or four days duration and never returned, except in cases of relapse several weeks later." Dr. Lee, on the contrary, says: "In a large proportion of the above mentioned cases two paroxysms were noticeable, the first coming usually without positive chill or chilliness; temperature usually high in the beginning became, after slight remission, high again toward the end of the attack."

It is difficult to reconcile such contradictions. The probabilities are that there is no invariable rule in regard to the paroxysm. In ten cases at the Sealy hospital, where careful thermometric observations were made, there was one paroxysm only in seven; in one there was an exacerbation in the afternoon of the day following that, when the temperature reached normal; in one the fever was of remittent type, rising at midday for three

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successive days; in one there was a slight return of fever on the evening of the first day after the temperature reached normal.

Before proceeding to make any deductions from the foregoing, it will be instructive to present a brief review as to the statements of authorities upon the differential diagnosis of the two diseases under consideration. An authority upon this subject I understand to be one who has had the opportunity of studying them at the bedside. I shall not attempt any complete bibliography, but the following I think will show what has been the accepted teaching:

H. D. Schmidt on dengue, Pepper's System of Med. Ed. 1885, page 884–885, says the temperature steadily rises in yellow fever, it is remittent in dengue; pulse in yellow fever falls on third day, while the temperature continues to rise, in dengue on the contrary, the pulse rises with the temperature. In the condition of the stomach also dengue considerably differs from yellow fever, for while in the latter disease this organ is almost always irritable, and vomiting frequently present, it is but rarely affected in dengue. The urine in yellow fever very frequently contains albumin as soon as the third day, in dengue almost never. Finally the absence of jaundice and the appearance of the eruption on the fourth or fifth day removes all doubt about the nature of the disease.

Sternberg on yellow fever, American System of Med., Vol. 1, page 290: "If a diagnosis has not been made before, the symptoms which characterize the second period of the disease should serve to differentiate it from all forms of malarial fevers. The cool and usually moist skin, the abnormally slow soft pulse, the gastric distress, and pain on pressure in the epigastrium, the yellow tinge of the conjunctiva, and the albuminous urine in a patient whose temperature is normal or subnormal, following a febrile paroxysm as represented in charts, certainly furnish a clinical picture which should be recognized." Speaking of dengue, page 291–92, he says: "It also is characterized by a febrile stage of comparatively short duration, but the charac-

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teristic symptoms of yellow fever are absent. Albuminous urine, stage of depression, hemorrhages, etc."

Matas, Keating's Cyclopedia, Vol. 1, page 894, quotes Holliday who makes a comparison of the symptoms of the two diseases after a careful analytical study of the opinions of over sixty physicians who had a long experience of both diseases in New Orleans and other parts of Louisiana as follows:

YELLOW FEVER.	DENGUE.
Temperature rising regularly.	Temperature rising irregularly.
Tongue white center, red edges pointed.	Tongue broad white indented edges, rarely red.
Stomach irritable, vomiting frequent.	Vomiting rare.
Conjunctivæ congested, jaundice appearing early.	Conjunctivæ rarely red, jaundice never observed.
Secretions all suffering, urine scanty, often albuminous, suppression frequent.	Secretions natural, urine *usually* normal, sometimes exceptionally traces of albumin.
Hemorrhages frequent and alarming, black vomit an urgent symptom.	Hemorrhages slight, black vomit very rare.

In regard to the condition of the urine in dengue, Matas observes (see foot note, page 889, Keating) "that in tropical pyrexiæ it is always a matter of great importance, both from the diagnostic and prognostic standpoint." The earliest observers of dengue satisfy themselves with noting simply the color, quantity and reaction, and these are usually most diversely described. Other observers are, however, much more satisfactory. Thus Morgan noticed a specific gravity 1004 to 1040, acid, *non-albuminous;* Chipperfield, acid, sp. grav. av. 1010, *non-albuminous.* Goodeve detected an occasional trace of albumin in four cases in the Indian epidemic in 1853, while Charles and Martialis *never detected* it in the epidemic of 1872. In China at Amoy, Muller and Manson *failed to find albumin.* Albuminuria was detected *only once* in the epidemic of Martinique in 1860, and twice in Cochin China by French observers in 1875 (Mahe). Albuminuria was observed exceptionally by Holliday and his co-laborers (loc. cit.) in Louisiana. Enough has

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been said to prove that albuminous urine is an exceptional occurrence in dengue, which differentiates it markedly in this respect from yellow fever.

Eugene Foster, Ref. Handbook Med. Sciences, Vol. 2, page 397, gives the following summary of the points of similarity and dissimilarity in dengue and yellow fever.

"In time of appearance, and generally in geographical distribution they seem related to one another. Dengue has, however, prevailed in Asia and Egypt, where yellow fever is unknown. Both diseases are arrested by severe frosts. Both dengue and yellow fever are diseases characterized by one febrile paroxysm." In order to show contrast, the symptoms will be arranged in parallel columns:

YELLOW FEVER.	DENGUE.
The fever rises steadily.	The fever rises regularly until the acme is reached, when a short stadium of a few hours occurs, followed by a remission, when a second rise of temperature takes place, but not reaching the former height.
The pulse becomes slower, while the temperature rises.	The pulse increases in frequency with the rise of temperature.
Fever lasts seventy-two hours.	Fever lasts five to eight days.
Vomiting frequent.	Vomiting rare.
Eruption rare.	Eruption common.
Jaundice almost invariably present.	Jaundice extremely rare.
Urine scanty, frequently albuminous and often suppressed.	Urine generally high colored, normal in quantity, free from albumin and never suppressed.
Hemorrhages frequent, alarming and often fatal.	Tendency to hemorrhages from nose, gums, bowels, lungs and womb, with occasional black vomit, but hemorrhages, as a rule, insignificant.
Often fatal.	Proverbially non-fatal.
One attack protects from another.	One attack not protective against another.
Not protective against dengue.	Not protective against yellow fever.

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Quoting Sternberg again from his article in Buck's Reference Handbook, Vol. VIII, page 60, speaking of the diagnosis of yellow fever, he says: "Of the three prominent features making up the clinical tableau of yellow fever, viz., a yellow skin, highly albuminous urine and black vomit, only one is a constant character which can serve in establishing the diagnosis in mild cases; this is the presence of albumin in the urine. At some period in the disease, even in the mildest cases there will be a distinct trace of albumin in the urine as shown by the usual tests, and this will be usually sufficiently abundant to leave no doubt in the mind of the observer as to the nature of the precipitate. The value of this test in the differential diagnosis is indisputable. It is true that a trace of albumin is sometimes found in the urine of severe cases of fevers of malarial origin, but in cases of yellow fever of equal severity as compared with these, the precipitate would, as a rule, be very abundant on the third or fourth day of sickness, forming a deposit to the extent of one-fourth to one-half of the contents of the test tube, or even more. At the same time a microscopic examination would show the presence in the urine of numerous granular casts from the tubuli uriniferi. These are found also, although in a smaller number, in the urine of the milder cases during the second stage of the disease.

"The second stage of the disease is commonly, however, well marked in non-fatal cases, and is its most characteristic feature, the remarkably slow and soft pulse, the evident prostration of the vital powers, although the patient may be comfortable, and even cheerful and desirous of getting up and taking food, the yellow tinge of conjunctivæ and skin (not always present), the tenderness on pressure in the epigastric region, and often a feeling of weight and distress, attended with intense thirst and vomiting of a transparent acid fluid, or of the characteristic black vomit, the tendency to passive hemorrhages from the mucous surface of the mouth or nose, oozing of dark blood from the gums or lips, or sides of the red and fissured tongue; the scanty urinary

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secretion, and the presence of albumin, usually in considerable amount, constitutes an unmistakable ensemble of symptoms."

It appears from the above quotations that the symptoms which have heretofore been relied upon to differentiate between yellow fever and dengue are the occurrence in the former of albuminuria, the characteristic facies (inclusive of jaundice), the divergent pulse and temperature, excessive irritability of the stomach, and increased disposition to hemorrhages. The absence of such symptoms in the main, the presence of an eruption in a large proportion of cases, and a want of mortality are characteristic of dengue. In the epidemic herein described we have an apparently inextricable confusion. A widespread epidemic of fever presenting the symptomatology of yellow fever in many instances, but with the eruption of dengue and practically with no mortality. One of two deductions is irresistible, either the two diseases approximate more intimately in their symptomatology than has heretofore been taught or yellow fever of remarkably mild type has been associated to a greater or less degree with dengue; granting the reliability of the testimony herein presented, both conclusions are warrantable. I shall not attempt here to solve this problem so far as the epidemic of the interior is concerned, but will present the evidence which is convincing to my mind that the latter proposition is true as to the coast cities of Galveston and Houston. Before doing so, however, let me refer briefly to certain facts in regard to the epidemic east of the Mississippi taken chiefly from the report of the Louisiana State Board of Health, dated December 6, 1897. The first death from yellow fever was reported by Dr. J. M. Hollowway, of Louisville, Ky., about August 18th, the patient having gone to that city from New Orleans via Ocean Springs, where the disease was supposed to have been contracted. Subsequently to which, four official investigations were made as to the nature of the epidemic at Ocean Springs, resulting as follows:

1. The visit of Dr. S. R. Oliphant, president of the Louisiana Board of Health August 22, 1897, who reports finding an epi-

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demic had been prevailing the previous six weeks, that 400 cases had occurred in the practice of two physicians, without a single resultant death, and that it was considered to be dengue of mild type.

2. On August 23 a commission of experts from the New Orleans Board, from the Mississippi State Board and others signed a report which concludes as follows: "After a careful inspection and examination of the aforesaid cases, we are positive in our opinion that the disease is dengue, and that in no case is there or has there been any symptoms which would lead to even a suspicion of a more serious disease."

3. On August 27, we have a report of another commission, to which the name of the health officer of Alabama is added, stating: "In reply to your request we have again investigated the fever at Ocean Springs, which is abating and absolutely without fatality. The conclusion arrived at was *that it is not yellow fever.*"

4. On September 6, we have the following statement: "The patient died Sunday night, and early Monday morning the expected autopsy was performed by the bacteriologist of the board in the presence of the medical gentlemen assembled. Unmistakable evidences of yellow fever having been revealed, we arrived at a unanimous verdict."

According to Dr. Oliphant the grand total of cases in New Orleans did not reach 2000, nor the deaths 300, a mortality of 15 per cent based upon reported cases which would doubtless be much smaller if founded upon the actual number. Another significant fact noted by Dr. Oliphant in the eipdemic, which verifies the history of previous ones in New Orleans and elsewhere, is that yellow fever does not burst forth suddenly, but gathers volume and force after smoldering for a time, e. g. it was introduced into Edwards, Miss., August 8, but gained no headway until the middle of September. Confirmatory as to the remarkable mildness of the last epidemic* Dr. L. Sexton

*American Medico-Surg. Bulletin, Oct. 10, 1897, page 903.

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writes from New Orleans September 20, "*Our present death rate is lower than in any epidemic of yellow fever*, if the present death rate prevails throughout this visitation we will have to send around a subscription list for our undertakers."

What bearing have these facts upon conditions as they existed in Texas? In my opinion they are convincing when taken in connection with the clinical history of certain cases that the epidemic upon the Texas Gulf coast was similar to that in Louisiana, Mississippi and Alabama, the results being modified by the late introduction of yellow fever infection and by the presence of unfavorable conditions for its dissemination. It should be remembered that the declaration of quarantine by Galveston was made on September 10, nearly a month after the recognition of yellow fever at Ocean Springs, that the later place is directly upon a common route of travel between eastern and Texas points, and that a month subsequently the diagnosis of yellow fever in Galveston and Houston was made by Dr. Guiteras. Under such circumstances it is not surprising that yellow fever infection should have been introduced into Texas; nor should it be a matter of wonderment that it should not have been generally recognized when we take into consideration that it came in the guise of dengue, was introduced late in the season, into localities where the conditions were unfavorable for its spread, and that according to all testimony, it was the mildest epidemic of yellow fever ever known in the history of the country.

Admitting that there is greater similarity in the symptomatology of the two diseases than has heretofore been acknowledged, the question arises, how can they be differentiated? In my opinion chiefly by the symptom complex of an acute nephritis in yellow fever and its absence in dengue. In the latter, simple parenchymatous changes may occur in the kidneys and be manifested by an evanescent and mild albuminuria. While in the former in a series of cases many will afford incontestible evidence of the occurrence of a severe nephritis, viz., scanty urine, of high color and specific gravity, intense and persistent

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albuminuria, hematuria, casts, decided tendency to suppression and the accompanying uremia.

The following are brief clinical histories of the three cases, two reported by Dr. R. T. Morris occurring in Houston* and one from Galveston reported by the writer:

Case 1.—Oct. 23, N. J., aged 28, was called late in the evening; found patient suffering with anorexia, pain all over body, but especially marked below the knees; constipated but urinating freely; temperature 103; severe frontal headache; no albumin in urine. Prescribed castor oil, and being called out of the city, did not see patient till three days later, when he was found to be very low; pulse hardly perceptible, not over fifty-four to the minute; retching but no vomiting; urine heavily loaded with albumin; total amount voided in twenty-four hours, three pints; patient muttering to himself, but on speaking loud to him could be aroused, and would give intelligent answer, although a few minutes after conversation ceased he would drop back to unconsciousness; at 6 p. m. vomiting of a coffee-ground-like substance set in, not more than a tablespoonful every hour till next morning, when, of a sudden, without any effort whatever, a gush of same kind of vomit was ejected, amounting to at least a pint and a half. Inside of fifteen minutes after this vomit patient expired, and after ten minutes his corpse was of a decided yellow tinge, and dependent portions discolored like after severe bruising.

Case 2.—September 19, called to see I. R. F., male, aged 22, found what I believed to be incipient dengue; reported improved by the 21st; on the 22d recalled in haste; on arrival found patient comatosed, pulse 56, temperature 103.5 degrees; on arousing he told me, and the statement was confirmed by his mother, that all urine he had passed since the day before (in all 23 hours) was in a vessel under the bed. By ocular inspection was found to be very dark and muddy, smell strongly ammoniacal, examined at office, albumin in great quanity, nearly solidifying in test tube. Returned at once to patient; found him again in comatose condition and having voided a small quantity of urine which had strongly colored the linen. Prescribed tincture digitalis, ergot, spirits juniper and liquor ammoniæ acetatis. Recovery uneventful but exceedingly slow; yellow tinge in eye appeared as late as 26th, disappearing after forty-eight hours.

Case 3.—R. T. Jr., native of Galveston, aged 16, of robust constitution and previous perfect health, was taken sick suddenly October 24,

*S. W. Med. Record, January 1898, p. 415.

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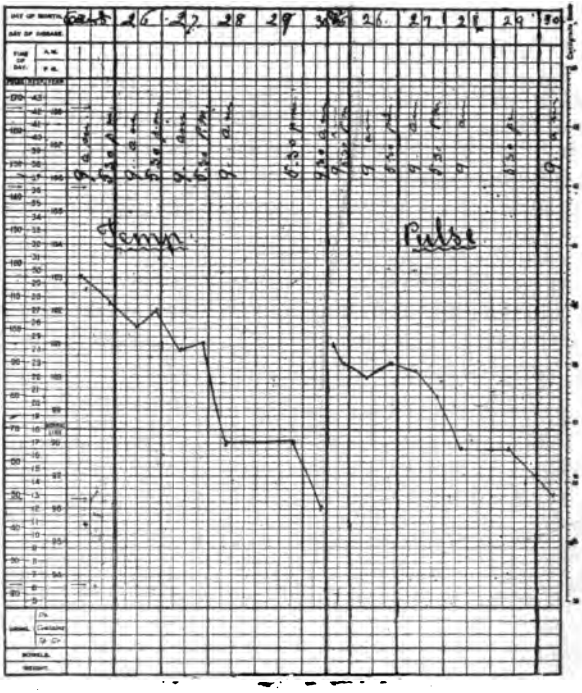
in the afternoon, with a slight chill followed by high fever, with intense headache, pains in back, limbs and joints. At my first visit on the 25th, as soon as the room was entered a peculiar nauseating odor was perceived, the eyes were watery and red with a yellowish tinge, the skin was decidedly yellow, the gums were softened and disposed slightly to bleed, anorexia was marked, tongue coated and red at its tip and edges, excessive nausea and disposition to vomit everything swallowed, bowels had moved from a purgative. The patient was nervous and disposed to sleep. The course of the fever is typical and is exhibited in the accompanying chart. It should be noted that when



a normal temperature was reached on the 28th, the fifth day of the fever, that the pulse dropped to 64, and that on the 30th when the temperature was subnormal the pulse was 50. The stomach continued to be irritable, there was epigastric tenderness. On the night of the 29th blood was vomited in small quantity; the urine was scanty, of high color and specific gravity. A heavy precipitate of albumin was

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found on the 29th, also granular casts. Daily examinations showed albuminuria during the following eight days, after which it gradually subsided as the urine became paler and more abundant. The albuminuria was more intense during the stage of depression. After a tedious convalescence recovery ensued. My diagnosis of a severe attack of yellow fever was confirmed by Drs. McLaughlin and Magruder, both of whom have had experience with this disease.

It is useless to add any comments or summarize any other cases with similar histories. What other diagnosis could have been made than that of yellow fever. *Anomolous dengue* was one of the names suggested during the recent epidemic; if this is dengue, then the identity of that disease and yellow fever is established. When pressed for a diagnosis in certain of these cases, some of the Galveston experts denominated them Weil's disease, or acute infectious jaundice, which is manifestly such a far fetched conclusion that words would be wasted in its refutation.

One of the arguments which has been repeatedly used against the existence of yellow fever in Texas during the past season, was the want of mortality. Upon this point let me quote Dr. Morris again:* "From October 1, 1897, to November 18, the death rate in Houston was 33⅓ per cent greater than in the corresponding period of 1896." The causes given in death certificates are as follows: senility 11 (four of whom were not over 60); dengue 5; enteritis and gastritis 11; fever 10; meningitis 1; kidney disease 5. The record of Galveston does not show any increase of deaths during the months of August, September and October over the previous three years. There were five deaths, however, preceded by symptoms of yellow fever; it is a significant circumstance that in four of these uremia was given in the certificate as the cause of death. In the other, congestion of the lungs was mentioned as the primary, and bilious fever as the remote cause.

Those who deny the existence of yellow fever in Texas during the past season rely chiefly upon the apparent indisposition of

* S. W. Med. Record, January, pp. 413-414.

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the disease to spread from numerous foci. In other words, they contend that the presence of the infection necessarily involves its dissemination. No extended argument is requisite to demonstrate the fallacy of such conclusions. The pathogenic microorganism of yellow fever is a facultative parasite, but its ordinnary mode of life is saprophytic. It grows and develops outside of the body when the conditions are favorable for its reproduction. The seed may fall by the wayside, or upon a rock, or among thorns and wither away, or upon good ground and spring up and bear a hundred fold. The fact that the soil of Texas was an unfavorable one for the multiplication of the yellow fever germ last season is an adequate explanation of the history of the recent epidemic. It is not contended that the hygienic condition in these cities was perfect, but that the combination of circumstances was antagonistic to the extensive dispersion of the infection. Instead of being a blot upon the sanitary escutcheon of Houston and Galveston, it is another demonstration of the fact which has previously been observed, that yellow fever may be brought to these places without necessarily involving an extensive epidemic or serious mortality. Two important lessons should be emphasized; 1, the urgency of promptly recognizing the early cases and calling them by their proper name, for by this means only may subsequent disaster in many instances be averted; 2, we should put our houses in order, in other words, adopt every possible method of domiciliary and municipal cleanliness. Napoleon is said to have remarked that "Providence was on the side with the strongest artillery." When yellow fever is around Providence is on the side of the town with the best system of sewers. Again, it has been demonstrated that yellow fever may masquerade in the garb of dengue and that the latter is a portable disease; leaving out of the case the probable association with yellow fever, it became a serious question whether dengue should not be considered a quarantinable disease. The suffering and expense incident to an extensive epidemic like the one of last season would certainly appear to justify measures of prevention.

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DISCUSSION.

DR. GEO. H. LEE: I desire to discuss the paper of Dr. West. I commend it as admirable, clear, forcible, conservative, fair. It is to be regretted that it is not more comprehensive. Reports from more practitioners and from a larger section of the State would have added to its value.

With some of his conclusions I am compelled to differ. The paper leads its author to a position which is unavoidable; that the symptoms relied upon in the past by the authorities to differentiate yellow fever have been conclusively shown to occur in dengue, and did appear in dengue in San Antonio, Houston, Galveston, Austin, Palestine, Belton and other points in Texas during August, September, October and November, 1897. This conclusion would have been strengthened by reference to the epidemic of dengue in Texas in 1885, in which the same facts were noted, at a time when there was no suspicion of presence of infection of yellow fever. I will read a note from Dr. Paine relating to his observations upon these points: *

GALVESTON, November 20, 1897.

My Dear Doctor Lee:

Your favor of the 12th inst. with reference to my experience on certain points connected with the epidemic of dengue which prevailed here in 1885 came duly to hand, but the pressing demands of my occupations have caused me, unintentionally, to overlook it until now, for which omission I beg you will forgive me.

I had frequent occasion to examine the urine of patients suffering from dengue during the prevalence of the disease in this city in 1885, and found albumen, in varying proportions, in numerous instances. Similar observations have been noted by other physicians of this place. In the light of recent events, I greatly regret that I did not examine the urine of every patient so affected as a matter of routine. The record of such an investigation would doubtless have possessed inestimable diagnoistic value. The want of correlation between pulse and temperature was a noticeable feature in the majority of cases who had the disease in severe form.

Very sincerely yours,

(Signed) J. F. Y. PAINE.

In his remarks before the Ninth International Medical Congress† he also referred to the frequent and severe hemorrhages in these cases.

*New Orleans Medical and Surgical Journal, January, 1898.

†Transactions, Ninth International Medical Congress (1887), Vol. 14, pp. 470-1.

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This conclusion is just the consideration which made me doubt the diagnosis of Dr. Guiteras on October 9th in Galveston. No commercialism, no passion, no prejudice influenced my conviction.

I had been treating dengue fever over thirty days. Was sick from October 2nd to 9th. And on emerging from sick room to find that Dr. Guiteras had announced the presence in Galveston of eight cases of yellow fever, I naturally concluded that the infection had crept into the city, and I applied to Dr. Guiteras expecting to hear from him the new features which had appeared. To my surprise, I learned nothing new. The same features he relied upon I had seen for a month, long enough for an epidemic to incubate, and with a city full of sick people, thousands of cases of the prevailing disease, the mortuary report showed a mortality of 7 per 1000 for the year, and, as far as I knew, no mortality from the prevailing sickness.

Uuder such circumstances I felt justified in hesitating to accept a diagnosis based upon such, to me, insufficient grounds.

The past epidemic, as Dr. West's paper shows, further points to necessity for revision of prevailing statements regarding the imporance and value of certain symptoms as differentiating yellow fever from dengue.

Hemorrhages, divergence of pulse and temperature, jaundice, albuminuria, have been shown to occur in both diseases,—the difference being rather of degree than of kind.

Dr. West impresses the importance of the presence of acute nephritis of severe type as a distinguishing feature of yellow fever. Here he moves in a circle,—returning to the original position of Dr. Guiteras, who was evidently misled by the presence of albumen in the urine.

If we concede that a mild nephritis does occur in a fair proportion of dengue fever patients can we decline to accept that this mild nephritis may become a severe type in occasional cases where the individual's condition is influenced by constitutional or other causes?

Of the records of urine examinations preserved in my notes, more than 10 per cent show nephritis accompanied by a large amount of albumen. These cases with one exception had well marked rash,—in the exceptional case slight desquamation occurred. These cases had other well marked dengue symptoms. No black vomit. No marked hemorrhages. All recovered.

Can we rely on any one feature as diagnostic? The doctor mentions several hypotheses as the result of various features of this epidemic.

It is my purpose to discuss these briefly, and I shall consider first numbers one and two together.

"The disease was only dengue fever. Anomalous cases presented much of the symptomatology of yellow fever but not proven to be of

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that nature, because failing to spread from foci, and unattended by mortality."

To my mind these hypotheses are reasonably true.

Following a suggestion taken from a paper of Dr. Scott I have tried to find one instance in which some individual had suffered from both diseases. I have been unable to hear of such an instance. Among my own patients, three had one relapse, and one man had three well defined attacks, the last in early November. Yet there was nothing in the clinical history of either case that could be regarded as suspicious.

Surely if Galveston had had fifty and Houston one hundred cases of yellow fever in an epidemic of thousands of cases of dengue, such instances would have been noted frequently.

Regarding the spread from foci: In our city we had at least thirty cases, each unassociated with any other, diagnosed as suspicious and yellow fever, and absolutely no new case from any of these foci, except in the instance of the man named Wade who died at the Sealy Hospital. Following this case, the interne who saw him and one of the physicians were ill with infections that were regarded as suspicious. It was remarkable what a malignant influence the fine sea air of Galveston had upon the infection. When Dr. Guiteras left there were 13 cases in the city. After his departure it was nearly three weeks before another case was diagnosed. I am aware that Sternberg holds the period of incubation of an epidemic is from two to six weeks but bear in mind that the first case which Dr. Guiteras referred to as suspicious died on September 9th, and that each one of these thirteen cases present on October 10th represented an independent focus of infection.

Regarding the mortality: I think after careful search that ten will cover the number of deaths that might be in any manner attributed to dengue or suspicious illness in Galveston during those three months, August, September, October. The mortality from all causes was 23 less than same period in 1896, and 31 less than in 1895. We must have had 30,000 cases of the prevailing sickness.

I must object to accepting Dr. Morris' arguments upon the mortuary reports in Houston unless he has traced out every case and can state positively this death was suspicious. To illustrate my objection, I refer to the report of Dr. Guiteras to the Surgeon General of the M. H. S. in which he mentions as occurring in the mortuary reports of Galveston for September three cases in which the death was probably from yellow fever. In each of these instances* I was able to show clearly that there was no cause for suspicion and I am sure the

*New Orleans Medical and Surgical Journal for December, 1897.

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doctor would not have included either in the manner he did if he had first investigated each case.

Passing on to Dr. West's hypotheses: I shall not discuss the suggestion that the epidemic was yellow fever only. No one believes so.

Hypothesis No. 3. "During the epidemic, yellow fever appeared in mild form in Galveston and Houston and was unrecognized." Or putting the proposition in a little different form: During the epidemic of dengue, a limited number of cases occurred in no way associated with or traceable to each other, of a more aggravated type, in which the symptoms strikingly resembled yellow fever, and regarding the nature of which there is a difference of opinion.

Among my own patients a number were very sick, displaying in varying degrees the symptomatology formerly regarded as indicating yellow fever. In six, large amount of albumen was found in the urine on the third and fourth day. Only one subnormal temperature was noted. No case in which a stage of depression developed. The yellowness, though mild was distinctly an icterus, as contrasted with the saffron yellow accompanying superficial turgescence described in yellow fever, the result of staining from blood pigments. I had no suspicious case and only one death. The detailed history of which is given in the issue of the N. O. Medical and Surgical Journal referred to. The patient died of chronic nephritis complicating dengue.

Now if the cases (by some considered yellow fever and by others anomalous dengue) were yellow fever, where did the infection come from?

Dr. West says in his paper that the infection was introduced as dengue. Well, dengue was in Texas in middle July. Dr. Guiteras located the first suspicious case as dying September 9th. If introduced thus in midsummer, why does it die out and disappear with a mortality of nil, when a like condition of affairs in New Orleans produces 3000 or more cases and a mortality of fifteen per cent?

Dr. West quotes the parable of the sower, which reads beautifully but does not explain.

If this was the infection of yellow fever, how does it happen that it appears in scattered foci in Houston and Galveston, also in other places of the State, preceded and followed by typical dengue?

If Dr. Guiteras was not in error when he declared that the infection was in both places in scattered foci, and would become epidemic, how did it happen that the course of subsequent events failed to develop the epidemic he anticipated,—as I am informed, the only instance in which he had diagnosed an epidemic status that did not materialize.

The fact is it has never been shown that the infection of yellow fever was ever in Texas in 1897.

If you refer to the epidemic as it began in Ocean Springs, you find

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that the clinical history first produced suspicion, but the autopsy made the diagnosis. And if you read the notes of that autopsy you can not question the diagnosis.

Now we had autopsies in Texas on cases considered suspicious or diagnosed ante-mortem as yellow fever, but not in a single instance do the notes of the pathologist correspond to the findings in the case at Ocean Springs and the Gelpi case in New Orleans.

My friend Dr. West is disposed to poke a little fun, if you will pardon the expression, at Drs. Burke and Wilkinson in connection with the Wade case which they called Weil's disease or acute infectious jaundice.

Let me read you portions of the report of the autopsy.

"The body was that of a male, aged about fifty years, and weighing about 120 pounds.

"Inspection showed marked emaciation. The skin was golden yellow on body and extremities; face and neck reddish yellow. Cadaveric rigidity well marked. Crusts of dried red blood were observed around the mouth and rectal orifice, the result of previous hemorrhages. In the lumbar and axillary region were perforations of the skin, not bleeding (the result of hypodermic injections during life) and some small red ecchymotic spots on parts of the body subject to pressure. On section, the thoracic and abdominal walls, showed little fat. Lungs, normal. Heart, normal in size, and fat around same golden yellow. Liver, considerably enlarged, congested. Section followed by oozing of dark blood from cut surface. No boxwood appearance or oozing of oil globules or other evidence of yellow hypertrophy. Gall bladder, enlarged and filled with straw colored fluid. Stomach filled with gray-black fluid, the result of the action of tincture of iron upon its contents, with odor of whisky. Mucous membrane, congested. No punctate hemorrhages. Small intestines, normal; contents gray, black and plastic, consistence of cream. Large intestines, normal; contents gray, black and plastic, with fæcal odor. Bladder, empty and firmly contracted. Kidneys, left contracted; weight, 6 ounces 135 grains;—right swollen, smooth; weight, 7 ounces 330 grains. Spleen small, firm; weight, 4 ounces 220 grains.

"Microscopic investigation by Dr. Allen J. Smith, professor of pathology, was as follows:

"'PATHOLOGICAL LABORATORY, University of Texas.

"'There were presented to the Pathological Laboratory of the University of Texas from the case of Mr. Wade, of Sealy Hospital, the liver, kidneys and spleen. Of these the liver and left kidney have, to date, been examined; other tissues are in course of preparation. The

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kidneys, under the microscope, show marked thickening of the walls of the blood vessels and of the capsules of Bowman. There is distinct round cell infiltration about the latter and, to a less extent, about the thickened vessel walls. The tubules in the pyramids are normal, the epithelium being intact and clean, with well marked and clearly stained nuclei. The epithelium of the cortex is very uniformly swollen, granular and in some places desquamated. I should say that the kidney had been the seat of a long standing interstitial inflammation, ant had had a recent parenchymation implaced upon it from some infection. There was no evidence of fatty degeneration in any part of the section, even on staining with osmic acid. No micro-organisms could be demonstrated in the tissues by means of carbol fuchsine staining.

"'The liver likewise showed a slight increase of interlobular con nective tissue, but not to the same degree as could be seen in the kidneys. The epithelium was slightly swollen and granular, but the nuclei were still fairly colorable with ordinary stains. No evidence of fatty degeneration even with osmic acid could be seen.

"'A culture was obtained from the patient's blood during life, upon a gar. Thus far we have been unable to get secondary growths after numerous attempts upon other media, although in several tubes ordinary mold fungi have been planted along with the inoculation. The growth at 60 degrees temperature appeared as a small, colorless, round, transparent colony, with a slightly opaque border, the same appearance remaining in either degrees or growth in the same tube. It has never lost this thin, same like appearance after changing the temperature to that of the room, and has in no wise appeared like the drop of sealing wax described by Sanarelli as characteristic of his bacillus cultures. A very faint fluorescence appears in the media close to the colony. Under the microscope the individuals are seen as small rods, from 1.5 to 2 m. m. long and from .25 to .5 m. m. wide, stained with the common aniline solutions and taking the stains more deeply at the ends than in the middle. No motion can be noted. The difficulty experienced in obtaining secondary growths of these bacilli has thus far prevented a detailed study of their characteristics, which it is to be hoped may later be successfully done.

"'Very truly,

"'ALLEN J. SMITH.'"

*Now contrast these notes from Ocean Springs case:

Necropsy eight hours after death, body of a fairly nourished female, rigor mortis well marked; conjunctiva, pale; eyes, golden yellow; body,

*New Orleans Medical and Surgical Journal, December, 1897.

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jaundiced; hypostatic congestions observed around the neck, back and shoulders.

Left lung adherent to chest walls, old adhesions; tubercles at base.

Right lung. adherent, cavities.

The pericardium was filled with normal fluid.

Heart, normal in size, muscular tissue indicated to the eye fatty degeneration.

Liver, pale boxwood color, normal in size, quite friable, easily torn; showed fatty degeneration.

Gall bladder filled with bile.

Stomach distended, contained about ʒ vi of black fluid. Extravasation of blood into the tissue of membrane, mucous membrane congested, vessels congested, serious coat of a yellowish tint.

Pancreas normal. The omental and peritoneal vessels congested.

The intestines, mucous membrane and vessels same condition as met with in the stomach.

Spleen normal in size and consistence.

Left kidney somewhat enlarged, somewhat softened. Cortical substance, yellowish tint; showed signs of fatty degeneration.

Right kidney normal in size, otherwise same as left.

Bladder normal.

The black vomit examined microscopically showed a considerable number of blood corpuscles and epithelium and disintegrated food. Also the streptococci (Sternberg), which I have been able to cultivate on agar.

Microscopical examination of liver shows that the hepatic cells are almost completely hidden by fat globules.

Kidneys examined microscopically show the presence of fat globules in cells covering epithelial layer of glomeruli and also in the uriniferous tubules. Some tubules are denuded of their epithelial lining.

*And these from the Gelpi case:

Pathological History.—Notes from the autopsy. General appearance: Whole body of distinct lemon-yellow color: ecchymoses generally, more marked over the posterior half of the body; conjunctivæ also distinctly yellow; bloody froth oozing from the mouth and nose; liver yellowish in tint and showing distinct signs of fatty degeneration. Kidneys: both very much congested and enlarged, distinct degeneration, though slighter than in the liver; both quite hemorrhagic on section. Spleen: not enlarged apparently, but showing signs of degeneration. Stomach: mucous lining much congested and swollen, and cavity containing bloody fluid thicker than that coming from the mouth.

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*New Orleans Medical and Surgical Journal, December, 1897.

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Report of Dr. O. L. Pothier, Pathologist and Bacteriologist, Charity Hospital.—I beg to report as follows on microscopical examination of organs from autopsy on body of Mr. Gelpi. Liver: found liver cells undergoing fatty degeneration; in areas of section this degeneration was very marked, leaving surrounding tissue less diseased. Many of the blood vessels were still filled with blood. Kidneys: almost all of the renal epithelium was degenerated, though thiswas more marked in some areas; the epithelial cells were markedly granular, staining badly everywhere, the nuclei in some barely visible the whole cell appearing occasionally as a mass of granular matter; some of the tubules were occluded with this material. Spleen: marked increase in lymphoid element; areas of fatty degeneration also found, but this degeneration seemed more localized to different areas, while surrounding tissue in immediate neighborhood appeared healthy. Stomach: except for the extravasation of blood in the coats of the stomach, especially in part of mucous membrane near glands and between them, and for the brownish discoloration at surface of mucous membrane, there was no inflammatory and degenerative change.

The last two Sternberg and Schmidt would diagnose as yellow fever.

The first no one could determine to be of that nature. Dr. Allen J. Smith so expressed himself.

Wade may not have had Weil's disease, but certainly his case did not exhibit the pathological changes of yellow fever.

Note especially the absence of steatosis in the Wade case.

Now I shall pass over the suggestion that dengue fever in the light of the experience of 1897 is properly a quarantinable disease, and submit the proposition that if we read the teachings of this epidemic clearly and fairly we will be compelled to conclude that either yellow fever was not present during this epidemic, or if it was present its behavior justifies the position that it is not for us a quarantinable disease; for evidently the infection does not propagate and spread at this day in this section.

Independent of any such consideration, without any reference to the epidemic just past, I desire to say that I believe the tendency of modern medicine is rapidly towards the position which will relegate quarantine certainly between cities of this country on account of yellow fever to the past. I believe the day is coming when the disease will be isolated in a community through disinfection practiced along scientific lines, and the infection die and disappear without spreading. And when a knowledge of the disease can take away its element of contagiousness, as has already been done noticeably in the hospitals in New Orleans during the last season, the popular mind will cease to fear it, the wheels of commerce will not be stopped, the marts of trade will know no interruption, and the mass of the people who work for

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their daily bread will not find themselves face to face with the alternative of starvation or a dreaded scourge.

DR. R. T. MORRIS: In reply to Dr. Lee's very able discussion I will state that he, like others who had similar views in regard to the late epidemic, begs the question, evades the issue. He contends that there was no yellow fever, but he does not show how dengue fever can possess the symptoms that were present.

A rational diagnosis of any disease is based upon history and symptomatology, and it is a bold man, indeed, who will ignore the experience and observation of medical authorities.

I have attempted persuasion, cajoling, and I have even demanded that they show me one authority to sustain them in the assertion that dengue can possess the symptoms that were observed in the so-called anomolous cases. Holliday does not, neither does Mahe, Holliday, Foster, Matis or McLaughlin; and it is not disputed that albuminuria, divergent pulse and temperature, and jaundice were observed in the suspicious cases, nevertheless many contend that it was only aggravated dengue.

Dr. Lee doubts that the suspicious cases were yellow fever, because those in contact with them or under the same roof did not develop a suspicious fever.

In Houston several cases could be traced to foci of infection. A well known physician in Houston had under his charge several suspicious cases in one family. They were exceedingly anomalous and albumen was in abundance. Later the physician developed a suspicious case, peculiar facies, hemorrhages from the bowel and albumenious urine. Again a young man nurses a friend, whose case is anomalous, and later the amateur nurse develops an anomalous case.

In the Turo Infirmary (N. O.), fully 100 non-immunes were with the yellow fever cases and no case developed in the hospital; fully the same number of non-immunes were exposed to the disease in the Isolation Hospital (N. O.) and none contracted the disease, although the ambulance driver, a non-immune, frequently came in contact with black vomit.

Dr. Lee objects to my mortuary table published in the paper I read at Beaumont. This table was copied from the records in the city physician's office and its accuracy can not be reasonably doubted. As to the fatal case which was of four day's duration, with jaundice, divergent pulse and temperature, albuminuria and black vomit; I will state that he was in a first class condition previous to the sickness, I examined him carefully not less than three weeks before and I can assert that his organs were normal and that there was no albumen in the urine and no indication of kidney trouble.

While I have a high opinion of Dr. Lee's discussion, I believe he has

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failed to sustain his position. In the light of past epidemics of yellow fever and in view of the literature concerning both dengue and yellow fever, there is only one interpretation of the anomolous cases and that is that they were yellow fever.

DR. H. A. WEST: To properly reply to Dr. Lee would involve the second reading of my paper, but as you are probably as much exhausted from the hearing as I am from the reading I will make no such attempt. There are, however, a few points to which I beg to call your attention. I am very happy to know that Dr. Lee thinks I have been fair and conservative, though he damns me with faint praise by regretting the paper was not more comprehensive. To show that I have attempted at least to be fair, I will state that I submitted my MS. to the doctor in advance that he might read, mark, inwardly digest, and possibly learn something about the subject. I am sorry that I can not return the compliment as to fairness upon the part of Dr. Lee, as I will proceed to show: 1st, Dr. Lee accuses me of moving in a circle and returning to the position of Dr. Guiteras when I state that granting the reliability of the testimony presented in the tabular report that in dengue simple parenchymatous changes may occur in the kidneys and be manifested by an evanescent and mild albuminuria while in yellow fever a series of cases will afford incontestible evidence of a severe nephritis, viz: scanty urine, of high color and specific gravity, intense and persistent albuminuria, hematuria, casts, decided tendency to suppression, and the accompanying uremia. If this is reasoning in a circle, or returning to the position of Dr. Guiteras, I know nothing of logic or the force of the English language, and it is unfair to make such an accusation. Moreover, I defy Dr. Lee or any one else to show a single authority for the statement that evidence of a serious kidney involvement belongs to the symptomatology of dengue. 2d. Dr. Lee says: "Passing on to Dr. West's hypotheses I shall not discuss the suggestion that the epidemic was yellow fever only. No one believes so." And yet we find Dr. Lee, in a paper published in the New Orleans Medical and Surgical Journal, discusses the subject under the title "*Dengue or Yellow Fever?*" What does he mean by this interrogative title? Either that in his own opinion the epidemic must be one thing or the other, and that there was no ground for those to stand upon who contend that the two diseases might exist concurrently, or he imputed this opinion to others. I submit that it is unfair now for him to say "no one believes so." 3d. Dr. Lee presents the notes of the autopsy in the Wade case to prove that it was not yellow fever, and states that Dr. Allen J. Smith so expressed himself, whereas to the contrary, Dr. Gammon, in reply to my question on this floor, informs us that Smith's opinion was that Wade died of yellow fever, and

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moreover that investigation subsequent to the autopsy demonstrated the presence of an organism corresponding in all essential particulars with Sanarilli's icteroid bacillus. Is it fair to quote Dr. Smith as having an opinion when Dr. Lee had every opportunity to know he had a different one? 4th. Dr. Lee gives the pathological changes in two of the Ocean Springs cases, leading us to infer that such changes must necessarily and universally be present in every person dying of yellow fever, which claim I do not think can be fairly made. The history of the Wade case gives the complete symptomatology of yellow fever, Dr. McLaughlin lectured on it as a typical case, Dr. J. E. Burke thought it was that disease until after the autopsy, and I submit that it is not fair to negative that diagnosis simply upon the absence of hepatic steatosis.

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A PATHOLOGICAL PROBLEM—FEVER: WHAT IS IT?

J. M. FORT, M. D.,

PARIS, TEXAS.

By way of introduction I would ask, first:—Can we answer this problem from a physiological standpoint, or do we have to enter the domain of pathology to find its solution? Secondly:—I would ask, should fever ever be regarded or treated as a disease in and of itself, or would it not be more in accord with scientific facts to consider it but one of various symptoms or manifestations of an existing pathological condition?

I am clearly of the opinion, Mr. President, that the profession by a more thorough and painstaking investigation of this subject will finally arrive at the conclusion that the vast majority of fevers, instead of being morbid destructive processes, as is generally supposed, are, indeed, but a symptom eliminative in character, and perhaps curative in effect.

Notwithstanding the rapid advance recently made in all departments of medical science, yet it is not at all strange that medical men have not arrived at any absolute or definite knowledge pertaining to a satisfactory solution of this problem, involving as it does, occult and hidden processes of nature, which cease to be, with the extinction of life. Processes which pertain only to life and disease, and which leave no trace behind them when that strange, unknown and unknowable principle, or super-physical force or phenomenon we call life leaves its tenement or habitation. This incomprehensible principle being the mainspring, or motor power which keeps in harmonious operation all those wonderful, mysterious and yet beautiful, physiological functions of the annimal economy, whose well being in turn, are essential to *its own* preservation.

It is a fact well known to all professional men that in the centuries long past, Galen advanced the opinion which without

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investigation or confirmation seems to have been adopted by the profession generally, and held undisputed sway over the minds of medical men from the third to about the middle, or perhaps beyond the middle, of the present century. This opinion was, that all fevers were the result or outgrowth of some localized inflammatory process, somewhere, in some organ, or tissue of the economy which acting like a consuming fire, would soon burn out the life of its victim unless subdued and controlled by active depletory remedies.

Predicated upon this erroneous theory was founded the old practice of resorting to active depletory measures in all, or nearly all cases of fever. Foremost in the list of these remedies stood that heroic remedy venesection. This line of treatment known for so many long years as the "Antiphlogistic treatment" was almost universally resorted to and practiced in all, or nearly all cases of fever, perhaps more heroically in what were regarded as acute cases down to within the recollection of the writer, and perhaps other gentlemen present.

In the rapid advance of medical science, however, as it came up out of the uncertain realm of theoretic speculation, into the domain of experimental and demonstrated facts, as has been witnessed in the latter half of the present century, this theory or conception of fevers was pronounced untenable and consequently abandoned. While this revolution of opinion in regard to the production of fevers was taking place, however, there were those who argued, that in the process of evolution which pertained and will ever pertain to all nature, that a radical change also took place in the character, or type of very many if not in all forms of acute diseases.

It is far more reasonable to conjecture, however, that the change here referred to, consisted not in the type of the diseases themselves but in a more intelligent comprehension of their etiology and in a more rational interpretation of their manifestations or symptoms.

Modern physiologists teach us that fever is first inaugurated in the system by an irritation of the cerebrospinal nerve centers.

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This irritation being provoked in the main, by some mobific agent in the circulating medium, accelerating and augmenting the process of combustion continually going on throughout the entire system. While this is certainly true, they fail to tell, however, what they mean by the word irritation.

We are further taught that animal heat is due to this physiological process, the temperature being regarded as normal until it exceeds in intensity a uniform fixed degree. When this occurs it is changed or said to be converted from a physiological into a pathological phenomenon.

Now it will be seen from this, Mr. President, that this theory of fever is based upon the hypothesis that animal heat originates in, and is maintained alone by this process of combustion —a physiological process as is well known inseparably connected with, and constituting a part of the process of nutrition.

Now I would ask if there is not a more rational theory of accounting for this phenomenon than this? May we not account for it upon a theory more in accord with physical or natural law.

When I ask the physiologist—What is heat or rather what is animal heat, how it originates, and how it is maintained?—he answers me by saying: "It is the product of physiological combustion, and as stated above, a process ever going on in and throughout the entire animal economy inseparably connected with the nutritive process."

Now, if this theory be true, and fever be as it is here claimed to be, that is, an exaggeration of the process of combustion, it would undoubtedly necessitate the inauguration and persistance of a hyper-nutrition during the continuance of the febrile stage in every instance in which this phenomenon occurs. We know this is not the case however.

Again he further tells me, that the absorption of oxygen and the liberation or elimination of carbonic acid gas in the act of respiration results in a degree of heat which is distributed to the entire system through the medium of the circulation. Admit this to be true, he does not claim, however, that even by an accel-

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erated respiration enough heat is generated by this process to produce fever, nor is it reasonable to suppose enough heat arises at this one point of production when distributed, to keep the temperature of the entire body for any considerable length of time at fever height. Furthermore it occurs to the writer that such a continuous temperature of heat as here indicated in a given locality would most assuredly be injurious to animal tissue.

I will say, however, that this theory of increase of heat in the economy by oxydation of the blood in the lungs, as a source of animal heat, has been abandoned by later physiologists. They now say that heat is associated with the process of nutrition, that there is no particular part or organ in the body endowed with the special function of calorification but that every part in which the nutritive forces are in operation produce a certain amount of heat. They further say that this is probably true of the blood corpuscles and other anatomical elements of this class. That the production of heat in the body is general, and one of the necessary consequences of the process of nutrition. This class of physiologists fail to tell us however, how it is generated or given rise to. To meet a seeming difficulty they have substituted the word calorification for that of combustion. Now combustion is defined to be the disengagement of heat and light which accompanies chemical combinations. By the word calorification is meant the production of heat especially animal heat. It will seem therefore, that by the use of both of these terms they but give terms to an expression to an existing fact, that is, the existence of animal heat. They fail to give us, however, a scientific and satisfactory solution of its origin or rather the essential process of its origin and maintainance. Scientifically speaking, combustion and calorification refer to the disengaging, and dissemination of heat, *only*, and not to its origin.

In considering this problem we must bear in mind that every tree and shrub, every plant and flower, even the most delicate, carry on and perpetuate life and growth by the same acts or similar chemical combinations in the acts of nutrition and re-

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spiration as does man, without a resulting injurious increase of temperature under any circumstances.

A German writer describes man as "A restless cause-seeking animal" and he might with propriety have added, that the physician was pre-eminently such an one. We may study this question of physiological combustion or calorification however, from every standpoint and as thoroughly as we may, and yet, we fail to find in it a satisfactory or adequate cause for the origin of fever. In other words, the Physiologists fail to give us a satisfactory solution of this problem, viz: What is fever? Therefore we must seek it elsewhere.

Then I ask the Scientists, *i. e.*, the student of natural philosophy or natural law—the student of the physical laws governing the universe—in substance the same question: What is heat? Without hesitation he tells me: "That elaborate investigation has proven that heat is the force or energy of atomic vibration or agitation; that it is not the product of combustion, nor is it a thing added to a cold body to make it hot. When such scientific investigators as Mr. Herbert Spencer, Mr. John Tyndall and others tell us—that what in our sensation is *heat*, is in the *object* nothing but molecular agitation, we cannot gainsay their testimony or ignore their scientific deductions. They illustrate this fact and tell us when a seed, it may be a grain of corn, is put in the ground that it is the heat engendered by atomic or molecular agitation in both the grain and its environment—a structural energy if you please—that is, the mutual repulsions, attractions and coalescing into different forms of these atoms which gives as a result, "first the blade, then the stalk—the ear—and the full corn in the ear."

I demonstrate this universal law of nature by rapidly bending a piece of ordinary wire—thus—and thereby generate heat. I hammer a piece of metal and by impaction and agitation of its molecules raise its temperature to a red or even a white heat, and find their answer to be true. If this be a fact—and who can ignore the intellectuality of this class of men, or overturn their scientific deductions of truth?—I repeat, if this be true,

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it unquestionably answers the problem herein submitted—What is fever? In the ages long past the savage demonstrated the truth of this universal law by rubbing two sticks together to obtain fire.

Then I ask this natural Scientist: "What is an atom?" and he replies:—"It is considered to be a particle indivisible, that is, the most minute of all entities, the smallest possible division of physical matter." This definition at once places the atom out of sight of human eyes, even with the aid of the most powerful microscope, and we are left to the alternative of judging and determining the results of things not seen, by the things that are seen. If, therefore, it can be demonstrated or proven that animal heat, or its exaggeration, fever,—be due to the energy of atomic agitation, we could with equal propriety say that they are due to molecular or cell agitation, as atomic agitation would necessarily extend to, and involve them all.

The contention in this paper, Mr. President, is that fever or abnormal heat is brought about in the animal economy by operation of the same physical law or force of nature as elsewhere. Animal heat is the same as fire—it is generated and radiated by the same universal law—and fever but its exaggeration. If man be as we are taught, the last and highest product of nature, he must of necessity be governed and controlled in his very being, and in every physiological function of his being, by the same laws and forces as all other like products. For instance the laws of gravitation, light, heat, electricity, magnetism, molecular polarity, etc., operate in, and upon his organism, and every organ of his organism just as they do in all other component parts of nature's products, which in the aggregate make or constitute the vast universe. In fact we may call him a miniature universe, and when scientific medical men loose sight of this important fact, and attempt to build up theories to account for the operation of the occult forces and energies of the animal economy, aside from, and to the exclusion of these universal laws of nature they cut man loose from his moorings and present him to the world not only as an inde-

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pendent, distinct creation, but as a miniature universe or complex organism whose very existence is governed and controlled by separate laws and forces, other than, and wholly out of harmony with, all else in the vast universe. Allow me to say just here, that the nervous system unquestionably is the key that unlocks these vital forces and energies.

Mr. President, we can not ignore the fact that the animal body is just as surely the product or outgrowth of atomic or molecular forces as the mineral or vegetable. "As regards matter and force the animal organism creates nothing"—in fact it is not a creating but a created organism. He is a creature of physical laws. He is born into the world, he grows into manhood, flourishes for a time, and decays, independent of his will or consciousness as do all other created organisms. "Who by thought can add a cubit to his statue?"

Then it should be remembered that nature's laws are uniform and all pervading forces varying only in degree or intensity, and in transformation or metamorphosis. For instance the same thermometric forces, and electric energies, which fan the earth with gentle breezes, sets in motion the terrific hurricane, and the destructive cyclone. The same electric current that enables friend to whisper to friend though far away, rives the oak, and rends the rock—"the same force that moulds a tear, rounds a planet"—the same law of polarity which determines the beautiful crystal flowerets of the snow, determines the forms and growth, of molecular and cell life, in the human system.

It is self evident that here we have a cause or force if you please producing heat independent of combustion. Are we to believe that we have one law regulating the production of heat in nature, and yet another in the human economy? I hardly think such a position tenable.

We should ever bear in mind that throughout all nature, in every instance in which atomic vibration or agitation gives rise to heat—heat is the antecedent and combustion (when it occurs) the sequence or result.

Mr. President, it is an admitted physiological fact that every

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tissue and organ of the body is composed of life cells. Early in embryonic life these cells are divided into groups, each group being endowed with the inherent capacity or indwelling power—a seeming intelligence—of selecting from the circulating medium such material as is necessary to the building up or replacing broken down tissue or depreciated cells; each group acting in its own special organ or tissue.

By the words "inherent or indwelling" as used above where we say "these cells exhibit the capacity or indwelling power of selection" we but express a mystery, the comprehension or explanation of which requires a faculty of the mind with which man is not endowed. Mind as yet seems to have its limitations. There are mysteries in physical nature which it can no more solve "than the eagle can outsoar the atmosphere in which it floats."

Through the medium of these minute invisible objects, by disintegration and segregation the entire secretory and excretory processes of the system are carried on. Through this medium of little microscopic cells—themselves the product of atoms and molecules—whose structural energy are due to the polarity of magnetism and electricity, or a vital force near akin thereto, the entire nutritive functions of the system are accomplished. "The building energy, and cohesive force here displayed, may be said to be, the solder of the material universe."

These instruments of mechanical structure are never at rest whether asleep or awake, day or night, sick or well, in action or at rest, while life lasts they never cease from labor.

May we not naturally conclude, therefore, that this unceasing normal atomic, molecular and cell agitation or vibration ever present, ever operative, gives rise to normal animal heat, and which when excessively agitated or rather when a molecular storm arises, gives rise to the phenomenon we call "fever."

It is conceded at the present day and the profession generally agree that diseases in the main, are due to the introduction of some morbific matter or noxious element—let it be disease-

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producing germs—their ptomaines, or other toxic agents—into the tissues of the body through the medium of the circulatory and absorbent systems. We further know that it is not only and especially in the localities where they are present, that these germs or microbes exercise a melancholy influence over the organisms they invade. The principal cause of their harmfulness being in the products of *their life* in the midst of the tissues.

These not only foreign but poisonous products, are carried to every microscopic atom and cell of the organism, changing, deranging and perverting, to a greater or less extent every physiological function of the entire system. The blood from which these vital cells draw their supply of nutritive material being thus rendered wholly unfitted and inappropriate for the uses and purposes for which it was designed. Mr. President, do we not find in this infected fluid, and these perverted and irritated tissues, a poisoned spring, well calculated to arouse to its utmost inherent capacity this reserve energy of atomic vibration and cell agitation?

We might refer to many instances in which special functions of organs are deranged and perverted by a deteriorated or abnormal condition of the blood supply. For instance, we have a type of malarial fever here in the South which is called the "comatose variety." The coma in these cases no doubt being due to the vitiated blood supply furnished the brain cells. Again, in pneumonia we frequently have delirium due, perhaps in the main, to a deficiency of oxygen in the blood. In these cases, however, there is not only a deficiency in one of the essential constituents of this nutritive fluid, but it is also further deteriorated by morbid products. Other instances might be mentioned were it necessary.

It is true in all such cases there is more or less local hyperæmia due to relaxation or impairment of function of the vasomortor nerves distributed to the capillary vessels of the locality. The same condition that gives rise to an increased afflux of blood to the outer surface of the body in cases of general

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fever. But in all these cases of local or general hyperæmia, notwithstanding there is an increased flow of blood to the organ, there should not, nor do I think there would be, any material change of temperature as a consequence, unless indeed there was an abnormal temperature of the blood itself. In other words we have no reason to infer that an increase of blood to any particular part or organ, would of itself, cause an appreciable rise of temperature in that particular part or organ. There is, however, in these cases and in all cases of fever an increase in the temperature of the blood itself due to the same fundamental cause herein presented.

I intimated above that fever might be, and perhaps should be when rightly considered, regarded as an effort of nature to rid itself of a morbid process. Many of the vital organs of the system are eliminative in character and function, especially is this true of the alimentary canal, the kidneys, the lungs and the skin. In many specific diseases the skin becomes an active eliminating organ, as is evidenced in the propagation of the specific virus by contact as in the class of eruptive diseases. I would ask if it is not also a fact that in this class of diseases, the danger of propagation or contagiousness, is considered enhanced during the febrile stage. Again, how could we account for the eruption on the skin, and its being overspread as it were with the specific virus, if indeed these specific poisons are not eliminated through that organ?

Capillary dilitation consequent on a failure or impairment of function on the part of the vaso-mortor nerves would evidently allow a greater proportion of the toxic agent contained in the blood to be carried to these eliminating organs than when such relaxation did not exist. Hence, elimination would necessarily be greater during the continuance of the febrile stage in all diseases due to the presence of these specific toxic agents in the system.

I am aware that the idea prevails, that a high degree of temperature continuing for any considerable length of time in the human system, is to say the least alarming, if not necessarily

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fatal. It may be, however, that this opinion is more ideal than real. If, however, we admit it to be true, it remains to be proven that it is the high degree of temperature that endangers or destroys the life of the patient. This most assuredly would not be the case, if as is contended in this paper, fever is but a symptom of an existing disease, even if its curative tendency by promoting elimination be denied.

In any event, excessive high temperature would only indicate a more than ordinary manifestation of the energy of atomic and necessarily cell vibration, due perhaps to the extreme virulency of the toxic agent distributed throughout the system. In other words if the gravity of a disease be estimated by the intensity of the fever or high temperature, should we not predicate such an opinion upon the basic principle, that the degree of temperature only indicates the gravity and extent of an existing lesion, if there be such, or the virulency of the toxic agent pervading the system, or the potency of any other morbid process giving rise to the fever?

This position would certainly be tenable in the case of many if not all germ diseases, if to be admitted (and I am sure it will) that disease-producing germs, and their products, even those producing the same disease, are of various degrees of virulency. We see this fact verified during the prevalence of all epidemics, some cases run a mild course, others severe, these conditions being determined by the degree of virulency of the morbific element, coupled with the constitutional powers of resistence of the patient.

Taking this view of the origin of fever—or what it is—it may be asked how we would account for traumatic and operative fevers, and fevers arising from local inflammations such as we not infrequently meet with? In answer to this I would say: The conditions of life are so nicely adjusted, the equilibrium of forces so delicately balanced that they are very easily disturbed and thrown into commotion. In my opinion, therefore, any morbid process or abnormal condition of the economy (especially of the circulatory medium) would be calculated to arouse

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the reserve power or energy of atomic vibration and necessarily act as an effectual agent in the production of fever, hence I must say these fevers arise from infection.

Again, it may be asked, how do we account for the rapid waste and loss of flesh in patients suffering from protracted fevers?

In answer I would say, not to the consumption of tissue by the process of combustion, but by the impairment of the processes of nutrition and assimilation—inanition or malnutrition if you please (such condition as we frequently meet with in infants), in connection with the material reduction of nutritive material usually prescribed for this class of patients. It should be borne in mind that every action which takes place in the body—let it be organic, functional or emotional is accomplished at the expense of cell disintegration and consequently loss of tissue, which must be quickly re-integrated from the materials taken from the blood or a resulting waste must necessarily follow.

In conclusion allow me to say—In my experience and observation in the treatment of diseases, especially in the treatment of such as were characterized by what is usually called "high temperature," has led me to doubt the correctness of the generally accepted theory not only as to the production of fever, or as to what it is, but also the relation it sustains to disease. I do not regard fever as a disease under any circumstances, or in any case, nor do I think it should be treated as such, and more, I do not regard a high temperature *per se*, as endangering the life of a patient. On the contrary, if fever be a process of elimination or an effort of nature to rid itself of a morbid process, as I think we have reason to believe it to be, I would ask should it be regarded as judicious practice to endeavor to mitigate or control this process by the use of depletive remedies, or by the administration of what are termed antipyretics? Would it not be more rational to promote elimination and radiation of heat by cold or hot baths.

It is true that physicians no longer regard this phenomenon, except, perhaps, now and then, as the offspring of local inflammations as did Galen and the older physicians. Nor do they

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treat them by active depletory measures, such as venesection—leeches—cupping—emetics—active purgation—blisters, etc., etc. But is it not a fact that they go armed with a host of sedatives and heart depressents, such as the coal tar preparations and other antipyretics, some of which are perhaps as enervating and as well calculated, if persisted in for any considerable length of time, to sap the vitality of the patient, if not as rapidly, as effectually as the old remedies which they are now so ready to condemn.

SYNOPSIS.—It was my purposes in this paper, Mr. President, to show that instead of the combustion of oxydation of material entering or such as are eliminated from the animal economy being the cause of animal heat and fever; that the true cause lies beyond and below this combustion or oxydation, in the antecedent atomic, molecular and cell vibration; which vibration not only gives rise to the combustion as a necessary sequence, but which is indeed the root or prime factor of abnormal heat or fever in the animal economy; also to show that fever is not a destructive process, as generally considered, but an eliminative process, curative in character.

DISCUSSION.

DR. BLAILOCK: Mr. Chairman, I am sorry that you are inclined to persecute me by asking me to discuss a paper so learned and excellent as the one just read by Dr. Fort. I listened to it with much interest and hope the theories therein advanced may be demonstrated as truths. What a burden would be lifted from our obscure ideas of the physics and chemistry of fevers, if the whole phenomenon should be explained by the simple principle—friction. I shall not attempt to refute any of the ideas advanced in this paper, as I feel entirely unprepared, if not incompetent to do so, but I hope other gentlemen present may do it full justice in the way of discussion and elucidation.

DR. SCHENK: I would like to ask Dr. Fort whether by the term combustion physiologists do not mean the results and changes accompanying the building up and breaking down of the body cells, i. e., regeneration and retrogression of the whole cells of the body. I don't believe they apply the term combustion in its strictest technical meaning as used in chemistry, when they endeavor to account for the production of heat in the body. I am of the opinion that all cell action

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is intimately connected with what physiologists term combustion, using this term in a very broad sense.

DR. BURROUGHS: I think this is one of the best papers that has been read. I have heard all the papers, and I think they are all good, but this paper of Dr. Fort's strikes me with a good deal of force, and I think it touches the key-note of one of the most important subjects that our profession can discuss or investigate. It is the truth that we are seeking, and when anything approaches near the truth, it seems to electrify us and we want to get close to it. So it is with this paper. It appears to me to come nearer the truth on the subject which it treats than any paper I have had the pleasure of listening to.

Fever is a subject allied, in some respects, to that of electricity, magnetism, heat and light, touching its cause or essential entity, and our knowledge of the same, as with fever, so with these and many other phenomena. If we should ask what is electricity, magnetism or heat, we can only answer by repeating properties, physical or chemico-physical peculiar, to and distinctive of each—instance here we should not lose sight of *the fact* that the properties of a substance or element do not constitute that substance or element, nor does the chief symptom of a disease constitute intrinsically that disease—on the other hand, we recognize the various forms of what we now call fevers, by their peculiar manifestations. Fever is an elevation of temperature in the animal economy above the normal. While fever may be said to represent, at all times, heat, yet the reverse cannot be held, since heat cannot stand for fever, until it ascends, in degree, above the normal. Fever is confined to quite a narrow limit on the scale of temperature, its field of operations resting between normal and that degree of temperature incompatible with animal life. Fever, indeed, is quite a common expression; we have the so-called yellow fever, typhus fever, typhoid fever, scarlet fever, etc., but are not these terms but suggestive of a much needed reform in our nomenclature? It should be noticed in these titles, that the word fever stands for the disease, while the adjective qualifies.

If I correctly understand Dr. Fort's position, it is that the source of all heat wherever it may exist, either within or without the animal economy, is due to atomic or molecular agitation. With this view I am in perfect accord. Molecular agitation, however, cannot constitute fever, or any part of it, until the temperature becomes abnormal, because, it would not do to say sensible heat does not exist below 98⅗° F., and if it does, then molecular agitation must exist also. If we should advance another step, and ask what is the cause of this increased molecular activity, which raises the temperature to the fever altitude, you will have, in my opinion, unlocked the door through which truth may be discovered. Being an advocate of the germ theory

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of disease, I can but believe that all fevers are determined by the action of specific disease germs upon the molecules of the various tissues of the body, whatever may be the true nature of such action. I regard the paper as a most valuable contribution, and must congratulate its distinguished author.

DR. BACON SAUNDERS: I knew we were going to hear something good when Dr. Fort's name was on the programme. I do not know of anything that I can say that will add to the interest of this question. It offers avenues of medical thought that are comparatively new to me. I have not given this question sufficient consideration to have any opinion of my own.

To say that I am pleased with the paper, that I was entertained by the paper, would be but to state a simple fact. I think this is a comparatively new theory of the causation of fever. Whether the doctor is correct in it, I am not prepared to say. I am reasonably sure of one thing, that is, that he is correct to this extent at least "That *fever* is a symptom and that this symptom is the result of germ action in some way," the germ action being brought about by ptomaines and these ptomaines in the system lead to the production of disease, seems to be a reasonable conclusion.

I was particularly struck with what the doctor said about traumatic fever, some of us doubtless have had some experience in this kind of fever, and if so, they realized the result of this germ action.

I remember the old teaching that when you tickled the web of a frog's foot with a pin it increased the flow of blood through the parts and thereby an elevation of temperature did seem curious to me. I never could quite understand why an increased amount of blood of an even temperature could materially increase the heat of the parts through which it flowed. There is something more than the increased amount of fluid going to the parts; in other words, it is probable that germ action in some form brings about the rise in temperature or fever. The increase of temperature and progress of the fever is due to infection, and what the old doctors called "inflammation" is now called "infection."

DR. H. W. DUDLEY: Fever is the result of a morbific agent, which is produced by the decomposition of vegetable material, plus heat and moisture. This agent is a very low form of animal life or *germ* (as we are pleased to call it), these germs may be diffused through the air or water which acts as a medium to bring them in contact with the circulating fluids of the body which conveys them to the nerve centers or ganglia, and they receive a toxic impression from their contact; the result of which is *fever*. We call this malarial fever; there is another family of germ life, more virulent in its action than the foregoing, this animalculæ depends for its production upon the decomposition of

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both animal and vegetable matter, plus heat and moisture. The ravages of this little fellow (class 2nd) is very potent. Under different circumstances he produces different effects upon the human organisms, viz: typhus, typhoid, dengue, etc. This class of germs under favorable circumstances is very prolific and their evolution very rapid.

Their excrements produce another class (3rd class) of germs, which are both infectious and contagious, susceptible of great tenacity of life exterior to the human system, and like class 2nd, differing under different circumstances, but widely contrasting either of the other in morbific and virulent action; producing such troubles as yellow fever, diphtheria, septicæmia, etc.

DR. J. T. WILSON: I cannot say anything that will enlighten the Association on this subject. It seems to me that Dr. Fort is in advance of his time in the theory presented. The way in which the subject was treated by the doctor sets us to thinking. I do not think that any one after due reflection and close study of the phenomena of fever can doubt that it is caused by molecular or atomic agitation.

The doctor states that fever is caused by molecular agitation, but where it begins or where it ends he did not say. Pathologists teach us that usually where you have fever there is a pathological condition, but is there a true pathological condition back of every fever? And does every pathological condition cause fever? Take a case of chronic cerebritis, it may go on to the end of the life of the person and from the beginning to the end you may have no fever. Sciatica and a great many other troubles do not always produce fever, but in these you do have pathological conditions. It may be that some force exists in the blood corpuscles which causes them to vibrate and hasten the action of the heart until the circulation is more rapid and the respirations become fuller, driving the blood with greater force to the surface until the capillaries and veins are not able to carry on their work as rapidly as before and it may be by this inequality that gives rise to other changes which in turn may produce fever. You take the blush upon the cheek of a young girl, it is caused by molecular agitation, the blood is driven faster through the arteries than it can be returned by the veins, but this sudden rush of blood to the surface does not produce fever. I have seen cases where the pulse has been beating very fast, as for instance in Grave's disease, and still the temperature was normal, with no appreciable fever Some pathologists say that a high temperature will not kill, but I have found from experience that when it rises above 104 or 105° F., if it is not reduced serious trouble may follow if it continues for some time. After this high fever subsides and the temperature again becomes normal, there may take place, as the doctor has said, an eliminating process, followed by reparation of the tissue cells that were practically consumed by the

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fever. In conclusion I will say that the doctor has given us a new theory in regard to the immediate cause of fever, the correctness of which is very hard to answer.

DR. J. M. FRAZIER: In the discussion of Dr. Fort's very able paper there is involved a question of theory and a question of practice.

The theory advanced by the doctor is both beautiful and plausible, and it seems to me to be strikingly analogous to the generally accepted "wave" theory of sound. As yet, however, I am not prepared to divorce my allegiance from the practical and plausible theory of Horatio C. Wood, of the University of Pennsylvania, which is familiar to all and I believe generally accepted.

As to the question of practice, from the standpoint of a general practitioner, I believe the announcement by the doctor that "fever should be regarded as a conservative force or factor in disease," is a dangerous dogma, and yet I am aware that the general trend of advanced medical opinion is in this direction.

When I have witnessed at the bedside of the fever patient the nervous tossings, the throbbing pain, the muttering delirium, I have felt irresistibly inclined, while using every means in my power to favor rapid elimination of whatever I may conceive to be the causative factor, at the same time to reduce the temperature, and whether this has been accomplished by hydrotherapy or the judicious use of one of the many fever reducing medical agents, I have comforted and composed my patient, and I believe have helped him to weather the storm of disease. I hope I have not interfered with the *vis medicatrix naturæ*.

DR. FORT, in closing the discussion, said: In answer to Dr. Schenk's question I would say, physiological combustion is the result of an antecedent heat. By the union of the atoms of oxygen in the blood and the carbon taken into the system as food, a chemical combination occurs which radiates the heat resulting from atomic vibration. There can be no combustion primarily originating heat. Under all circumstances it is a radiating or disseminating process. Throughout the entire process of nutrition, including the excretion of excrementitious products, there is atomic vibration or agitation, which agitation gives rise to and maintains animal heat. I have read no work on physiology which ascribes animal heat to atomic agitation, as is contended for in this paper. If heat is not molecular vibration, please tell me what it is? Where there is no atomic vibration there is no heat, consequently animal heat and its exaggeration—fever—are the result or outgrowth of atomic vibration.

In answer to Dr. Frazier, let me quote the paper: "In any event excessive high temperature would only indicate a more than ordinary manifestation of the energy of atomic and necessarily cell vibration, due perhaps to the extreme virulency of the toxic agent distributed

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throughout the system. In other words, if the gravity of the disease be estimated by the intensity of the fever or high temperature, should we not predicate such an opinion upon the basic principle that the degree of the temperature only indicates the gravity and extent of an existing lesion—if there be such—or the virulency of the toxic agent pervading the system, or the potency of any other morbid process giving rise to fever?" I have no objection to lowering the temperature when excessive by hydropathic means, as frequent sponging or bathing not only radiated heat but also promoted elimination, but seriously object to accomplishing this end by remedies which lowered vitality and sapped the fountain of life—the heart.

I thank the members of the Association for the complimentary manner in which they have received and discussed my paper, and especially Dr. J. T. Wilson for the mention of cases wherein the conditions existing went far to prove the correctness of the positions assumed.

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THE PREVENTION OF TUBERCULOSIS.

MATTHEW M. SMITH, B. Sc., M. A., M. D.,
AUSTIN, TEXAS.

I desire to present for your careful consideration today a paper—not dealing with some rare and curious case that is seen but once in a lifetime; no new theory concerning the probable cause of some obscure symptom in a curable disease, or the physiological action of some newly discovered drug that offers no advantages over well known and tried remedies, and the cost of which would exclude it from general use; but I desire to direct your attention to a disease that is universal in its prevalence and that is constantly seen in the practice of every member of this Association. My subject, as announced by the chairman, is: "The Prevention of Tuberculosis."

All the climatic influences in the world, with the latest antiseptic modes of treatment, at best, only cure a fair percentage of the cases of tuberculosis. Koch's Tuberculin, with its hundreds of vaunted serums of later discovery, have proven to be of little curative value, and until a "specific" has been discovered and proven, the profession should act rationally, and endeavor in every way possible to prevent the disease. To this end I submit the following five propositions for your consideration:

1. Tuberculosis is a disease universal in its prevalence.
2. Tuberculosis is a disease in which the cause is well known and established.
3. Tuberculosis is a disease that is to a great extent incurable.
4. Tuberculosis is a disease that is infectious and communicable.
5. Tuberculosis is a disease that can be prevented.

These assertions are self-evident to any one that has given

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the subject much thought, and I shall refer very briefly to the first three, confining my remarks mainly to the infectious nature of tuberculosis and its prevention.

That Tuberculosis is an Universal Disease.—It is reported to exist in every country where civilization is known, and in all seasons of the year. It is shown that about fifty per cent of the human family are infected by it some time in life. It causes about fourteen per cent of all the deaths in the world. In the United States, for instance, more than 450 people die from this disease every twenty-four hours, or over 175,000 annually. It has been demonstrated that we have tuberculosis of the lungs, larynx, intestines, peritoneum, uro-genital organs, brain, spleen, liver, heart, bones, and, in fact, almost every portion of the body is subject to its infection in some of its forms. I appeal to the members of this Association individually to recall their own experiences with the disease as a proof of its prevalence.

As to the Cause of the Disease.—There are very few enlightened physicians at the present time who will deny the cause of tuberculosis as established by Dr. Robert Koch in 1881, when he discovered and demonstrated the bacillus of tuberculosis as the primal cause of the disease; it has been further proven by inoculations on the lower animals and by accidental infections on the human subject. This fact has been so well established and repeatedly proven that every one accepts it. I shall proceed without further remarks as to the cause. In passing, however, I might say, the locality of infection is commonly the lungs and intestinal canal, comprising about three fourths of all cases in the beginning. Children are ordinarily infected through the alimentary canal, and commonly from drinking tubercular milk; usually young adults are infected through the lungs by breathing air containing the bacilli in a dried condition.

It is true there are many cases on record, and well known to all, where an individual is exposed to every form of infection, but the three essentials for infection are not all present (namely, debility, abrasions and bacilli), or else the individual is pro-

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tected by some mysterious power of resistance that renders immunity where another would succumb.

As to the Curability of the Disease.—The death rate is positive proof of the many cases that are incurable. The thousands of vaunted cures for consumption is sufficient evidence that we have at present no specific cure. That a large percentage of cases are cured if given early treatment, I do not deny; but even then the cure is slow, with a strong tendency towards a recurrence of the attack.

The Disease is Infectious and Communicable—The health department of New York city, January 19th, 1897, amended the sanitary code by the adoption of the following section: "Pulmonary tuberculosis is hereby declared to be an infectious and communicable disease, dangerous to the public health. It shall be the duty of every physician in this city to report to the sanitary bureau, in writing, the name, age, sex, occupation and address of every person having such a disease who has been attended, or has come under the observation of such a physician for the first time, within one week of such time. It shall also be the duty of the commissioners or managers, or the principal, superintendent or physician of each and every public or private institution or dispensary in this city, to report to the sanitary bureau, in writing, or to cause such a report to be made by some proper and competent person, the name, age, sex, occupation and last address of every person afflicted with this disease, who is in their care or has come under their observation, within one week of such time. It shall be the duty of every person sick with this disease, and of every person in attendance upon any one sick with this disease, and of the authorities of public and private institutions or dispensaries, to observe and enforce all the sanitary rules and regulations of the Board of Health for preventing the spread of tuberculosis.

Dr. Borland says: "All weak persons, especially the young, are liable to contract tuberculosis, if the three essential factors are present, viz., debility, abrasions and bacilli." In the convalesence of typhoid fever, measles, whooping cough, la grippe

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and many other diseases, the first two are present (debility and abrasions), and the third can be easily supplied by the millions of tubercle bacilli, which are to be found in every public building, railway and street cars, jails and penitentiaries, hotels and many other places.

Marfan demonstrates the danger of infection from sputum in the following observation: "Twenty-two previously healthy factory employes worked for many years together in one room. In the year 1878, two men suffering with ulcerative pulmonary lesions were added to their number and these latter two expectorated freely on the floor; between the years 1884-1889 thirteen of the original twenty-two died of tuberculosis. The frequency of infections between man and wife, or from one member of a family to another is well known to you all. Recently I had an occasion to examine an applicant for life insurance who gave a history of three brothers and two sisters having died of tuberculosis; while the father and mother, grandparents and other members of the family were all free from consumption or other lung diseases. Inquiry clearly showed the first case must have been acquired by outside infection and the others were directly contaminated by nursing. Four of the five died within five years time and each was healthy until coming in contact with the infected.

The committee appointed by the municipal authorities of Paris to investigate the contagiousness of tuberculosis reported and recommended the necessity of separate quarters for tuberculous patients, or having separate wards in hospitals; and further recommended the erection of suitable sanitaria for tuberculous patients; also that patients and attendants should be carefully educated to understand the necessity of prophylactic measures and with penalties to insure their enforcement, and further that attendants with any throat or lung trouble be prohibited from nursing consumptives. Out of 4,470 attendants in the hospitals they found 1,296 diseased; 651 with bronchial troubles and 599 with tuberculosis, and of the 599 deaths within the past ten years 217 were due to tuberculosis and 154 from

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other respiratory diseases. Anders in his latest work on Practice, in referring to the disease says: "When the facts that tuberculosis is almost universally prevalent, and that each patient throws off countless millions of bacilli are remembered, it is clear that abundant opportunity is everywhere presented for infection, or in other words, that secondary sources of infection are numerous and varied.

That the Disease can be Prevented.—Dr. Borland of Pittsburg, Penn., in a paper before the Pennsylvania State Medical Association, said: "The knowledge we now possess of the pathology; the three essentials of infection; the common source of infection; the common routes of infection; the means at our command to prevent infection, ought and can stamp out, if acted on intelligently and promptly, more than one-half of the cases of tuberculosis in the next twenty-five years, and ninety-six per cent of all cases in the coming century.

Drs. George B. Fowler, Hermann M. Biggs and T. Mitchell Prudden composed the medical part of the Board of Health of the city of New York, and in pursuance of their duties they have made a careful study of tuberculosis and the best methods of its prevention in large cities; they claim there are more than 20,000 cases of tuberculosis in New York City, and its ravages have increased thirty per cent in the last fifteen years. In their official capacity they made four recommendations for its prevention. 1. The establishment of tubercular hospitals for the control and treatment of the indigent. 2. The adoption of suitable laws requiring all cases to be reported and restricted. 3. That all institutions that admit tubercular patients for treatment be subject to the inspection of the board. 4. That the people at large be taught about its danger and sources of infection and methods of prevention, and the board concluded their report with the following timely remarks: "We fully believe that with proper regulations, tuberculosis may be restricted within the narrowest bounds and eventually, perhaps, almost exterminated. This is not the idle dream of sanitary enthusiasts or theorists, but is a conviction founded upon the most

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thorough and conclusive experimental investigations, which have been amply confirmed by practical experience.

Hospitals for the tubercular have been established by many nations, and the death rate is being reduced, as a result from the isolation and proper disinfection of all sputum from those under treatment. England has more than eighteen such hospitals with 7,000 free beds. Germany likewise has many; France has recognized their value and has established several, and the United States has realized their importance and has three or four. Massachusetts of all the States has the largest death rate from tuberculosis; the public had become alarmed about its rapid increase and active steps were taken for its suppression. The physicians of the State of Massachusetts recommended the establishment of a State hospital for the tuberculous, and the last legislature appropriated, almost unanimously, $150,000 for such an institution, and furthermore the sanitary board of Massachusetts condemned nearly 5,000 head of cattle, suffering with tuberculosis, during the past year, and the State paid out for such purposes $117,000.

Cities where the oldest established sanitaria for tuberculosis are situated, that are conducted strictly upon scientific principles, show a decreased percentage of infections among the inhabitants, due first, to the percautions taken by disinfections, and secondly, by the inhabitants receiving practical instruction about the cause of infection and means of prevention; while upon the other hand, in those cities with splendid climates, but with open resorts, like Nice and Mentone, the death of the inhabitants from tuberculosis has increased wonderfully, due to infection from the tuberculous invalid who disregards all sanitary rules concerning himself. In fact, before the Mentone climate was considered so beneficial to the consumptive, the inhabitants seldom, if ever, died of tuberculosis, while now the death rate among them is frightful.

I only have time to enumerate but a few of the many steps that are being taken, not only in Europe, but this country, towards the prevention of this fearful disease. I desire to espec-

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ially impress these facts upon the profession of Texas. Our death rate at present is comparatively low and by the combined efforts of the medical profession it will remain low. If one will but bear in mind, the prevalence of the disease, its insidious beginning, its slow development, its chronic course, and its dangers of infection. It has been demonstrated, that in the advanced stages of the disease, where the lungs are affected, a single case may expectorate several billions of bacilli daily, and these bacilli, unless destroyed by artificial means or the direct rays of the sun, retain their vitality. This sputum dries and the bacilli are blown about in the atmosphere and are breathed into the lungs, thereby producing the disease.

If a case of small-pox is reported in a city, see the result: the inhabitants flee the neighborhood, the infected are quarantined, and the patient is isolated or sent to a lonely camp, yet these people are exempt or can become so by vaccination, while on the other hand, the consumptive lives with the family, sleeps with the healthy, expectorates about the floor, kisses the children and infects directly and indirectly people with a disease not rendered harmless by vaccination, but almost incurable. We readily understand the cause for this difference, the one attacks quickly and openly and the result is soon over; while the other steals gently upon you day after day and watches for a time when you are unarmed, or weak from disease and the lung is unguarded or inflamed, and this deadly bacilus charges and the individual is taken a life prisoner by an uncompromising enemy, for when once well fortified in the human organism, nothing short of an edict from all the powers will dislodge it.

Gentlemen, in my earnest efforts to impress upon you the duty we owe to the healthy of a community, by adopting such strict rules for the prevention of this disease, I would not have you think for a moment, that I desired to place any additional hardship upon the unfortunate individual that has fallen a victim to tuberculosis, for there is no diseased person that appeals to me more. We should lend a helping hand to alleviate and cure his case when possible. The consumptive should

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not be mistreated, but taken into our charge and given every attention that would in any way benefit him. If one looks into the family history of any family, consumption's sad story will be told in some of its forms. Longfellow has appropriately said:

There is no flock however watched and tended,
But one dead lamb is there;
There is no fireside howso'er defended,
But has one vacant chair.

In conclusion, I desire to say that if I have succeeded in impressing this subject upon the members of this Association in a manner calculated to keep it prominently before their minds, I will be satisfied; for let us strive not only to cure, when possible, the afflicted; but also to adopt such measures as will eradicate this disease from the face of the earth.

[The author has drawn largely from an article of his published in the Texas Medical News, of 1897.]

DISCUSSION.

DR. S. C. RED: I do not consider tuberculosis preventible, for the reason that the turbercular germs are of such wide distribution in the animal kingdom, that its destruction is practically impossible.

The avian bacillus of tuberculosis while not clearly infectious for the human, may be, and if it is, opens a much larger field for infection than heretofore known, for it develops freely upon vegetable matter.

In relation to sanatoriums for this class of people, I would not recommend same, since they are calculated to have serious mental effects and thus react upon the patients; I see nothing but harm to come from such a procedure, as seventy per cent of the human family have some time the trouble and to class such a large lot of our citizens on a par with lepers would have the effect of creating many cases and thus aggravating the very trouble for which it was intended to relieve.

I think that much can be done by educating the general public as to the nature of the disease and as to the best means of keeping up the general health, so as to avoid infection. I consider climate and good hygiene surroundings the best method of cure.

In closing I wish to compliment Dr. Smith for his able paper and to say that I think he is up to date from a medical standpoint.

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DR. H. A. WEST: Replying to one of the gentlemen who has spoken of the influences contributing to *rest* as explanatory of the favorable effects of high altitudes upon patients with pulmonary tuberculosis I wish to record my absolute dissent against such views. Associated with high altitudes we usually find purity, dryness and rarefaction of the atmosphere, conditions favorable for exercise in the open air, and unfavorable for the pathogenic effects of the tubercle bacilli. Out of door exercise stimulates all of the vital functions, digestion, assimilation, secretion, excretion, circulation, and respiration. The latter function is directly affected, for in order to secure sufficient oxygenation in a rarefied atmosphere, fuller, freer, and more rapid respiration is requisite, the lungs undergo expansion, residual air is driven from them. In place of a favorable we have an unfavorable medium for the growth and development of the bacilli, added to which the increased power of tissue resistance afforded by nutritional betterment, and and we have a rational explanation of the modus operandi of high altitudes in the cure of pulmonary tuberculosis.

DR. FORT: I have a word to say about the City of Mexico in relation to altitude. Dr. Bennett was on a trip with me to the city several years ago. The plateau upon which the city stands is 10,000 feet above sea level. I had heard it was a good climate for consumptives, but learned from the local physicians that the atmosphere contained 25 per cent less oxygen than the valleys by which it is surrounded. I was further told that a large proportion of tuberculous patients who came there for health were sent home in coffins. I think sea breezes for this class of unfortunates better than too elevated an altitude.

DR. M. M. SMITH: Dr. Red said that the disease could not be prevented, owing to its universal prevalence and that it was useless to try to stamp out tuberculosis; we could prevent some cases, but there were too many.

That is the very point I wish to emphasize that we can prevent some cases today and keep infection from others, and in this way there will be less tomorrow, and by reducing the number from day to day we will accomplish just what I advocate.

He further says that he does not favor the establishment of sanatoriums for consumptives, because it would be nothing more than a coughing institution. One patient seeing another in that condition will have a bad effect mentally. I agree with the doctor that the mind exercises a great influence, but by the establishment of sanatoriums, as I suggested, we could give treatment, good rich food, regular hours of sleeping, taking proper precaution towards the prevention of the disease, and this I claim will cause some patients to be benefited,

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and cure many, among the indigent that could not get well in the surroundings in which they ordinarily live.

This does not refer to the people of means, who can seek any climate, have everything that they desire, they of course could be better treated elsewhere, but for the class to which I refer sanatoriums are the best, and statistics have proven it.

I further hold that we have a right to report such cases, when they exist, and to subject them to laws and regulations for their control; we have authority in smallpox, scarlet fever and similar cases, and I therefore hold we have an equal right in regard to tuberculosis, since it also is infectious and communicable.

I have further learned in conversation with parties who have visited Mentone that before consumptives went there for their health, that the native inhabitants never died of the disease.

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SOME REMARKS CONCERNING HYPNOTISM.

MATTHEW M. SMITH, B. Sc., M. A., M. D.,
AUSTIN, TEXAS.

I shall not attempt in the few minutes I shall detain you to define and explain hypnotism, or describe its varied phenomena, or enumerate the diseased conditions benefited by its use, or refer to the various methods in use to produce the hypnotic state, or speak of its interesting history from the great Mesmer down to the present time. To discuss these subjects satisfactorily would require too much time, and they can be more clearly understood by a careful perusal of any recognized work on the subject.

My intentions are to introduce the subject before the Association in order to elicit discussion and to show the great value of suggestion in the treatment of a large number of diseased conditions.

Hypnotism has been much studied during the last ten years by many of our best thinkers and scientific investigators of the Continent and England, as well as in the United States, and they have succeeded in placing it thoroughly upon a scientific basis. Many of our best physicians and neurologists make use of it in their daily practice. Regular instruction is given upon hypnotism in several schools of the United States. And a hypnotic magazine has been established and is published monthly, and I think it is therefore time that we as physicians should at least understand its phenomena and uses.

I do not claim hypnotism to be a panacea, neither do I pose as an enthusiast, but this much I do know, that before I gave the subject much investigation, I believed it to be of little value; but I now know there are a great many cases that are especially suited for hypnotic treatment and that cannot be properly cured without its use.

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Dr. Christian A. Herter, of New York, the translator of Dr. H. Bernheim's work on "Suggestive Therapeutics," says: "Hypnotism is no longer one of the curiosities of science, it is a therapeutic resource of unquestionable value, and which lies at the hands of every medical practitioner who is willing to take the trouble to inquire into its value and the manner of its use."

I desire to impress upon you the value of the mental factor in the production and cure of disease. Dr. Maudsley says: "So intimate and essential is the sympathy between all the organic functions, of which the mind is the crown and consummation, that we may justly say of it, that it sums up and comprehends the bodily life,—that everything which is displayed outwardly is contained secretly in the innermost. We cannot truly understand the mind functions without embracing in our inquiry all the bodily functions, and I might, perhaps, without exaggeration, say all the bodily features." He further says: "To me it seems not unreasonable to suppose that the mind may stamp its tone, if not its very features, on the individual elements of the body, inspiring them with hope and energy or infecting them with despair and feebleness."

Dr. John Hunter says: "There is not a natural action in the body, whether voluntary or involuntary, that may not be influenced by the peculiar state of the mind at the time." It is impossible to be seized by a vivid idea, without the whole body being placed in harmony with that idea. We have the tear of grief, the eye of pride, the frown of anger, the blush of embarrassment and the stare of astonishment. The typical expressions of the criminal, the idiot, the martyr, the saint, or the man of learning, all show, but too clearly, the mind's impression upon the bodily framework.

The stick of a pin causes a message to be transmitted along a sensory nerve to the brain, where the idea of pain is formed, or *sensation acts on ideation;* and the reverse may be true, oftentimes, that *ideation can produce sensation.* This goes far towards explaining the great mental cause of disease. There are no imaginary diseases; there are diseases due to the imagina-

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tion, which may be accompanied by real functional disturbances. They are developed by the influence of suggestion in some form, and may be benefited or cured by the same element, if rightly used.

Certain diseased organs will produce certain typical mental symptoms. See the hope, life and determination of the consumptive on the verge of death; the despondence, fear and anxiety of heart troubles; the anger, envy and irritability when the liver is at fault, and so it is with cases involving any special organ of the body.

If due credit is given the mental factor in the treatment of disease, you will have an explanation for most of the seemingly wonderful cures that occasionally surprised even the physician himself. The most successful physician is he who, inspiring the greatest confidence in his remedies, strengthens and exalts the imagination of the patient. Fear and faith of all the mysterious processes of the mind, exert the greatest influence over the body. Fear predisposes to disease, and the exercise of simple faith will oftentimes cure it. Daily mental gymnastics, of one's well being, will prove a revelation to many victims of insomnia, dyspepsia and nervous prostration. But woe to the man who forms the habit of daily counting his pulse, and who watches closely his tongue, and if he gets a thermometer and notes his temperature and selects some organ as the seat of his trouble; such a man will soon need the services of a physician, and he will be one of the most intractable cases for treatment, unless the physician is aided in treatment by the mind's influence. You have all been consulted by perfectly healthy people, who were alarmed about their cases, because they had read scary patent-medicine advertisements, or received a private communication from experts on "Loss of Manhood." Much dread of surgical operations and the anxiety of childbirth, as well as many other trying ordeals, can be avoided by keeping from patients all sensational experiences of others, and by the use of well directed suggestions as to favorable results and speedy recoveries.

Suggestion is the great element in mind treatment. It is the

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influence exerted by an idea suggested and received by the mind. It exerts its influence in the wakeful state, even in the dreaming state, but it produces its greatest influence upon a person in the hypnotic state. Suggestion introduces, cultivates and confirms an idea in the mind of the hypnotized subject, this idea forms an image, which produces a sensation and the person accepts, believes and acts upon it as being original. Suggestion has now revolutionized psychology. In the education of the child this element has great value. Sectarian schools and definite religious and political faiths realize its great value and make use of it in every available way.

Experience, tact, abiilty to judge human nature and psychological knowledge all aid in one's success with the use of hypnotism. It should be used as judiciously as any drug in the pharmacocepa, and with other treatment when deemed advisable. Only physicians should be permitted to use hypnotism and then it should be confined to its legitimate use in the treatment of some diseased condition. Traveling charlatans should no more be allowed to exhibit its peculiar effects before the public, than an ordinary layman be allowed to illustrate the effects of morphine, chloroform or strychnine by placing persons under their influence upon the stage.

In presenting this paper before the Association, I do not wish to be understood as not believing in the great value of drugs, *for I do;* I am a firm believer in the rational method of medication, which has for centuries accumulated facts upon which the science and art now rests; which wages war against multiform disease by every possible means, and considers and uses any agent that can successfully prevent or combat disease in any of its forms, irrespective of where it originated or what school or sect claims its legitimate use. True science will always accept well founded facts, and intelligent and educated physicians will make use of any element that will assist nature in the restoration of health.

I shall not take up more of your time; but will close with the following general advice as to the use of hypnotism and its

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lighter forms of mental treatment in the cure of disease. "As far as you can consistently with truth, lead the patient to believe a given result will accrue, and you will have gone a long way in reaching the ends of your medication. Excite his will power, make him believe much depends on his own determination, and always remember to administer the cordial of hope!"

"Hope? Aye, who can measure its power to reanimate and vivify, to whip up the languid heart, and send the blood coursing through the artery and vein; to drive the nerve fluid with electric speed, to awake into renewed activity every organ and tissue; to smooth, though with delusive touch, the pillow of disease and pain. Hope? who, with magic wand, doth dispel our doubts and fears, and who doth line with silver sheen the dark cloud of despair."

"Hope? thou beggar's wealth,
Thou lovers victory, and thou sick man's health."

* * * * * * *

"What though the cause be not explained,
Since these effects are daily ascertained,
Let not self interest, prejudice or pride,
Induce mankind to set the means aside;
Means, which though simple, are by heaven designed
To alleviate the woes of human kind."

[Some portions of this paper have appeared in print formerly by the same author.]

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THE COURSE AND TREATMENT OF MYXŒDEMA WITH SPONTANEOUS DISLOCATION OF THE HIP-JOINT—REPORT OF A CASE.

A. H. SCHENK, M. D.,

KENNEY, TEXAS.

The following report of a case occurring in general practice, has a surgical as well as a medical interest, only the clinical history as a whole makes it unique and deserving of mention: Mrs. G. F., aged 37 years, German by birth, came to me for treatment in the spring of 1894. She gave an excellent family record. At that time she was a sufferer from intermittent fever. This was of a stubborn recurrent type, which yielded only to a prolonged continuous course of quinine, arsenic and strychnia. At this time, I remember that a peculiar appearance of her skin and face made an impression on me. She was a stranger, and I attached little or no importance to the dry glistening appearance of her skin. She was still taking an antimalarial tonic several weeks later, when her husband remarked to me that she still suffered from disinclination to work, and that her face and extremities seemed swollen. I advised the discontinuance of the tonic as it contained arsenic. She followed my advice, but the swelling did not disappear. It was some weeks later when I was again consulted regarding her health. The swelling still existed, and she complained of a general feeling of languor; appetite and other functions were apparently normal. Several careful examinations of her urine lead me to exclude kidney disease. The edema persisted and was gradually increasing. Myxœdema was suspected, but believing it might be a skin disease, which I was unable to clearly define, I prescribed in a vague way the mercauro and arsenauro preparations. After a prolonged trial these were abandoned. Iodide of potassium was now given, but it was not borne even in very small doses. She became pregnant and, with no assignable cause, aborted in Octo-

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ber, 1895, in the fifth month. Her recovery from this seemed uneventful, when three weeks after the abortion a very painful and inveterate attack of sciatica developed. This taxed my resources to the utmost. It ran a course of its own, lasting nearly three months. Treatment was only palliative, as no measures seemed to shorten the attack. When the sciatica had spent its force, and paroxysms of pain were on the decline and becoming milder each day, the primary disease remained unchanged. I saw her seldom, and had discontinued my visits over two months, when I was once more called to see her. In addition to the previously described general subcutaneous thickening, she now had a dislocation of the femur upwards and backwards. The dislocation had occurred spontaneously. The toes of the dislocated limb, as usual, pointed over the instep and across the tibia of the other foot and limb. There was no pain now, except that any attempt at movement gave excruciating pain in the diseased joint. Her general condition now was about as follows: The face had lost its natural appearance, with puffy eyelids, large, pouting lips, alæ nasi much thickened, giving the nose a cut-off, stumpy and pug appearance. The cheeks were much enlarged, nearly pendulous, and each had on it a bright red net work of capillaries. The lobules of her ears were enlarged, and not symmetrical, one being three times the size of the other. Her eyebrows were disappearing, and the hair on her head was dry, lifeless and brittle. As a whole, her appearance was coarse, stupid and expressionless. The hands were enlarged, with fingers not tapering, but spade like. The feet were very much thickened. The entire skin was of a muddy yellow hue, shining, hard and dry. The nails of her toes showed a lack of nutrition, appearing lifeless and brittle. On the feet, ankles and heels were localized areas of gangrene, forming first blebs; these would slough and finally form ulcers, suggestive of Raynaud's disease. The subcutaneous connective tissue over her whole body was thickened. The skin on her face, back of the hands, arms and feet could not be pinched and lifted with the fingers, but was solid and stiff on account of the increased cellular tissue. Her

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mind was remarkably clear. She was downhearted and despondent to a degree over her helpless deformed condition, but I cannot say that she was very dull in intellect, considering the advanced stage of the disease otherwise. At times she was hopeful and cheerful. With the assistance of Drs. Biggs, McGregor and Thompson I attempted replacement of the dislocated limb. Reposition was effected by the Cooper method with straps and pulleys; however we could not retain the head of the femur in its socket. We then decided to excise the head of the femur. The hip was laid open after the method of Sayers. I then removed the whole head of the femur with about one-third of the neck, at the same time endeavoring to secure an oblique articular surface to fit into the cavity. The cavity was now deepened with a Volkmann spoon, the new surface of the neck of the femur placed in it and the limb dressed, and a long Hamilton extension splint applied. We found no capsular ligament. The ligamentum teres had also disappeared and the rim of the acetabulum had shrunk, leaving the cavity very shallow. The head of the femur had diminished in size and was easy to remove, being of rather soft, brittle consistence. Her condition was hopeless. The lymphatics of her body would enlarge periodically, her eyebrows fell out altogether and the localized spots of gangrene and on her hands increased in number and severity. I now placed her under the thyroid gland treatment —P. D. & Co.'s thyroid gland tablets were given in 2½ gr. doses twice a day at first, and gradually the dose was increased until she was taking 5 gr. doses four times a day. Untoward effects were looked for, but she never had a symptom of tachycardia or sleeplessness. Her improvement has been exceedingly tedious and slow; it has, however, been uninterupted and the change for the better is so pronounced that we lay claim to a successful treatment. The photograph which I present was taken recently. It still shows clear signs of the disease. She has an artificial joint as a result of the operation and has a painless, useful limb on which she is able to walk without crutches.

In conclusion I do not presume to offer anything new or

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startling in my paper, but have endeavored to interest you by giving in a practical way the clinical history of a case that presents some unusual phases and seemed entitled to a report. The following points are worthy of remark:

1. The comparative clearness of intellect.
2. The temperature was found subnormal only at times.
3. The marked tolerance of the thyroid treatment.
4. The localized blebs and gangrene on her extremities.
5. The hip-joint complication.—What is its relation to the general disease, and what were the pathological changes of the joint?

DISCUSSION.

DR. BACON SAUNDERS: I think this is an extremely interesting report of a very interesting case. The doctor propounds some questions that I should be very glad to answer, if I had had time to look up, before the reading the report. As I said last night, doctors would oftentimes like to look up cases before giving an opinion.

I am inclined to think in the absence of any data on the subject from which to draw my conclusions, that this is a genuine case of myxœdema. If I had been the doctor in this case, I do not think I would have excised the hip joint. I would have put her on the thyroid treatment, as I think that gives the best results. In such a case as the doctor describes I think it is doubtful whether I would have undertaken the operation; but I hope in the future that we may be able to do these patients more good than has been done in the past along this line.

I am very sorry that I did not have an opportunity to have read up in this case to have enabled me to have discussed it as it should have been.

DR. HARRISON: Dr. Schenk has certainly presented us a case of extraordinary interest, but is it myxœdema? It occurs to me his description falls short of the group of symptoms or conditions characteristic of that disease. Our best and most recent authorities on this subject recognize atrophy of the thyroid gland, slowly progressive, œdematus tumefactions of sub-dermal tissue particularly about the face and lips and supra-clavicular spaces, coincidental with mental failure, amounting to complete stolidity. Dr. Schenk's case scarcely fills this bill, though I shall not attempt to suggest a diagnosis.

It has been my misfortune to meet with a case which presents many points of similarity to the one Dr. Schenk describes, the course of

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which has been sufficiently anomalous to prove of interest to medical men. The case, a lady of about thirty years of age, married and the mother of four healthy children, the youngest about four months old, was taken about 3 p. m. on the 29th of September with an apparent congestion of the brain which rapidly sunk her into a comatose condidition in which she lingered for several hours. At 1 a. m. of the next day the reaction became manifest. I arrived at 6 the same morning and found her with temperature 96.5, pulse 35 and respiration 4 to the minute, and very shallow. She lingered in this condition for nearly a week, being acarcely able to articulate all of the syllables of a word without stopping to get breath. The family history was excellent in every respect except that her father had nearly all of his life been subject to severe attacks of neuralgia, though still alive and past three score and ten. At the end of the second week she began to have paroxysms of neuralgic pain involving branches of the fifth nerve. These paroxysms would begin on the top of the head, pass rapidly to the temple, the eyeball, the cheek bone, the teeth and finally to the ear; and were of excruciating severity. In a very brief period the cervical and occipital nerves became involved extending gradually, thence down the spine and over the inter-costal nerves, thence to the lumbar region and over the abdominal nerves, to the groin, the sciatic nerve and down it to the knee and finally to the ankle joint. These paroxysms were up this time confined to the right side; subsequently a paroxysm would occur and run a similar course down the left side.

At the beginning of the sixth week a very decided abdominal enlargement was observed—at first supposed to be dropsical, but hydragogue cathartics made no impression on it. In a few days enlargements of the size of half an orange occurred over each cheek bone; a little later similar enlargements occurred on the inner and outer surfaces of the head of the tibia and then another tumefaction as large as a man's hand over the region of the spleen and then another over the lower dorsal and upper cervical vertabræ and still another over the lumbar vertabræ. Tumefactions next appeared over the tendinous portions of the pectoral muscles near the point of insertion and finally in the supra-claivicular spaces, giving her the completed picture of a case of myxœdema; though there was no mental failure nor was her complexion perceptibly impaired.

Every remedy in the materia medica, which, upon theoretical or practical grounds had been found available in neuralgias, had been tried and found wanting, except morphia, small doses of which always gave relief. The best talent the State afforded had been consulted without avail and it was finally determined to send her to New York for professional advice. She made the trip by sea and improved from the day she left port, being able to reduce the daily dose of morphia from 1½

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gr. to ⅛ gr. on the seventh day out. The severe illness of her husband in New York necessitated her return before she had derived any benefits, except from consultations there.

Massage and Swedish movements contributed more, perhaps, than any other remedy to the removal of these tumefactions. There was at no time any apparent deficiency of the thyroid glands.

A remarkable and noteworthy feature in the case is the fact that lactation recurred as soon as she began to regain her strength and has continued ever since. It was especially profuse during a paroxysm of pain. Coincidentally with this is a suppression of the menses, which has resisted the most vigorous efforts to secure its restoration.

This lady's normal weight before she was attacked was 103 pounds. It is now 176.

I should have stated heretofore that the tumefactions spoken of were quite elastic—did not leave a pit on pressure—and another feature, they would increase in size during a paroxysm of pain and decline again slowly after the paroxysms had abated.

DR. T. W. SHEARER: I am very much interested in Dr. Schenk's excellent paper, and I would like to ask the nationality of the doctor's patient, and if he knew her previous history?

DR. A. H. SCHENK: She was a German. I gave her previous history in my paper.

DR. SHEARER: There are a great many cases of leprosy in America, and the case just struck me as resembling leprosy.

Among the Norwegians, especially, there are a great many cases; they keep their history concealed as much as possible, but the State Board of Health tries to find them out, and keeps a record of each case.

If they have leprosy in Norway, I do not see why we should not have cases here in Texas, as they immigrate here.

In 1884 the Iowa State Board of Health* investigated the subject of mainly in Winnisheick county; and that there were also cases in Minnesota and Illinois. These cases came mainly from Norway and Sweden —some not developing the malady for many years after coming to this country, but were of leprous ancestry. I recall one of these cases which I had the opportunity of observing and who finally died of the tubercular form of the disease, and I see a great resemblance and similarity in this case and the one Dr. Schenk has reported. To show that leprosy has not received the attention it ought in this country, I refer to Journal American Medical Association, Vol. XXIX, page 1282, 1897.

DR. A. H. SCHENK: In reply to Dr. Saunders, I appreciate the force

*Report State Board of Health of Iowa for 1895, page 50.
leprosy in the State, and found there were eight cases in the State,

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of his remarks on the propriety of the operation when we did it. She was at this time in a hopeless state, and we hesitated and discussed every feature thoroughly before we decided to operate, and then we did so only because the patent was very anxious to have something done for her relief. Any movement in the bed before the operation produced excruciating pain, and again I want to say it was done at her urgent request.

In reply to Dr. Harrison, I will say that I believe that it can be nothing else but a case of myxœdema. The photograph really is too dark and makes her look worse than she now appears. I presented her before the Brenham Medical Society, where all gentlemen present agreed with me in diagnosis.

One important fact I have neglected to put in my report—namely, the absence of the thyroid gland in her case. The improvement after the use of the thyroid gland, also speaks for correctness of my diagnosis. I believe the hip-joint trouble followed or was due to the sciatica probably, as the joint gets its innervation from the sciatic nerve. The sciatica very likely was due to the abortion.

One trouble in treating her is that I cannot get her to keep up the thyroid tablets continuously; when she improves to a considerable extent she stops taking the medicine.

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SECTION ON OBSTETRICS AND DISEASES OF CHILDREN.

REPORT OF SECRETARY.

T. L. KENNEDY, M. D.,

GALVESTON, TEXAS.

Mr. President and Gentlemen of the Texas State Medical Association:

In the absence of a chairman to this section, it becomes my duty to make a report to this Association upon the progress of Obstetrics and Diseases of Children. It would be too tedious a task, and asking too much, from the patience of the Association, to review all that has been written upon these subjects since last the chairman of this section made his report. A few only, of the more important subjects will be touched upon. The advances in this section have been of a nature rather tending to perfect ideas already put forward, than to suggest any new and startling conditions, operation or line of treatment. The operation of symphyseotomy, revived a few years ago, and seeming to promise so much in a certain class of cases, has fallen to a certain extent into disrepute; not on account of failure of the operation itself, but rather on account of its abuse. As is often the case in any new operation put before the profession the pendulum for a time seems to have swung too far. Many, earnestly desiring to benefit their patients and rescue them from a dangerous condition, have, it seems, been biased to a certain extent in their judgment, and by performing symphyseotomy, enervated upon the less serious operation of version or high forceps. The operation of symphyseotomy I believe to be one of the best at our command within its narrow limits bounded on the one side by cæsarean section or craniotomy, on the other by

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high forceps or version. Then, too, instead of having a uniformly good condition of the pelvic bones following this operation, in many cases the inability is so great as to cause serious discomfort and to interfere to a great extent with patients of a certain class, who have to work for a livelihood and are incapacitated after operation from carrying on their duties. Puerperal infection, it is sad to say, still occupies an important place in obstetrics. Sad because it is a condition so thoroughly understood and the prophylaxis of which is so well known and appreciated by every physician who practices the obstetric art. In time it is to be hoped that the only cases of puerperal infection seen, will be those unfortunates who delivered without medical attention, and becoming infected, through the ignorance of untrained attendants, come to us for treatment of that condition. Antistrepticoccic serum, holding the same relation to streptococci infection as does the antitoxin to diphtheria, is still deservedly gaining ground. In the serum treatment of puerperal infection only those cases in which the condition is due in great part or in whole to the action of the streptococci respond to the serum treatment. Not every case of puerperal infection depends upon any one class of micro-organism; we should use the antistreptococci serum in conjunction with other well tried means, stimulants, tonics, douches, care of any lacerated or abraded surfaces, removal of placental remains, curettment, etc.

In regard to the influence of histerectomy in puerperal infection advanced a few years ago, it seems this operation, as one might expect, has no influence where the infection has been carried in the blood to every part of the system, but is only indicated in those rare cases in which the uterus is riddled with small pus pockets and the constitutional condition due to that. Some recent observations upon the character of the vaginal secretions during pregnancy, show the presence of free lactic acid about one-fourth per cent as a result of the action of vaginal bacillus, this acid secretion having a distinct germicidal action. In cases of infection, a diminished acidity or even an alkaline reaction being present depending upon the severity of the in-

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fection. The antipartum douche except for cause, washing away the acid, germicidal secretion, and laying the patient more open to infection than would otherwise be the case. The most striking claim recently applied to the human race, but one used to determine sex in animals for some time, is that of Prof. Schenck of Vienna, who is working upon a plan of treating pregnant women, by diet, surroundings, etc., and so modifying the puerperal condition as to determine at will and with fair accuracy the sex of the child to be born. Report comes from Vienna that the professor's plans were announced prematurely and as a consequence his house is beseiged and his work seriously interfered with by crowds of would-be patients. His formal report will probably be sent out about December, and will be looked forward to with a great deal of interest.

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SOME REMARKS ON THE ESSENTIAL ETIOLOGY OF ECLAMPSIA.

W. F. STARLEY, JR., M. D.,
GALVESTON, TEXAS.

Many novel and ingenious theories have been advocated to explain the pathogenesis of eclampsia gravidarum, but of late years the one which has taken hold most firmly on the profession, is that which ascribes the condition as dependent directly on a state of systemic toxæmia.

It cannot be said that the etiological problem has been completely solved, for even the most enthusiastic supporter of the toxæmic idea does not claim more than a general scheme, leaving to the future the task of working out specific details. It would be folly to assume that any one theory of eclampsia can survive in its entirety the conflict of time and discussion, and it may be that in the future we will have to modify our opinions to suit new conditions and facts; however, it would seem that in the light of modern research the present theory strikes most directly at the root of the evil, and as it is a truism that the successful management of the affection depends entirely on a correct interpretation of its causative factors, we may hope that the establishment of blood poisoning as a working basis may lead to clearer ideas of treatment and rob eclampsia of some of the horrors which have been inseparable from it in the past.

Assuming that we are correct in ascribing to a toxæmic state of the blood the palm of primal importance among the supposed causes of eclampsia, the question naturally arises—What is the source of this toxic material which poisons the blood stream and tends to such disastrous results? The theory of blood poisoning has been premised on the time-worn physiological fact that the processes of katabolic metabolism are attended

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by the elaboration of excrementitious substances which in a condition of health are cast off from the body by means of the several emunctories; these waste products may fail wholly or in part of elimination through faulty action of the several excretory organs concerned, notably the kidneys, and then retained affect the tissues morbidly and the result is the eclamptic explosion. We are practically without knowledge as to the composition of these toxic substances, and equally uncertain as to their manner of formation. It is probable that several toxines are concerned, with variations as to relative preponderance under varying conditions of metabolism; and it may be that they possess different degrees of toxicity and effect the body in a greater or less degree, according as one or the other is in excess, or as a more powerful combination acts to better advantage than one possessed of feebler virility.

While the kidney has been mentioned as deserving first place, being the organ on the integrity of which most frequently depends the maintenance of the balance between assimilation and excretion, it is probable, from the results of post mortem examinations, that the liver plays an important role in its province of toxine destroyer, and the serious and fairly constant lesions found in this organ seem to imply that its functional capacity may probably be considerably impaired from the beginning and bear an important relation to the other causative factors.

Indeed, it has been urged that in some rare instances we are dealing with a condition of cholaemia, rather than one of uremia.

The channels of elimination accessory to the kidneys are of no less relative importance than the latter, and on the perfect or imperfect performance of duty by the skin, lungs and intestines hinges much of the responsibility for disturbed excretion. These organs are capable of sustaining an enormous vicarious action to the great relief of the kidney in that organ's hour of need, and conversely it is true that when their output falls below the normal standard, their work is added to that of the

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more powerful associate; and the latter, however capable it may be ordinarily to rise supreme to the demands of the economy, may be laboring already on a basis which will admit of no increase of burden. So again comes the disturbance of the equation between toxine formation and elimination, and the result is not uncertain.

When we come to consider more closely the relation of the kidneys to eclampsia, we must admit that in the vast majority of instances the toxæmia is directly dependent on renal insufficiency—the urine is albuminous and contains the morphological elements necessary to establish a diagnosis of nephritis. Unnecessary zeal has been shown in endeavoring to establish as separate entities the conditions eclampsia and uræmia. Uræmia in the broad sense means simply an anto-intoxication—the retention in the circulation of excrementitious substances, end products of metabolism (probably somewhat antedating urea), without regard to kind or number—as a result of kidney failure, acute or chronic.

While it is proven that the retention of urea in the blood does not constitute the toxic element, and will not of itself cause convulsions, it may be fairly assumed that the estimation of its total output will afford a comparatively reliable index to the excretory capacity of the kidneys for solids of an analogus nature. Of such importance is this that the urinary analysis during pregnancy should include careful determination of the total output of urea. It would seem unwise to assume that partial or complete suspension of function on the part of the kidneys were in every instance the result of morbid change in the renal texture; many cases are reported, on the best of authority, where there was an entire absence of albumen, casts, and cells, and little if any decrease in the output of urine. Here, then, are cases in which we cannot concede the existence of nephritis and yet are confronted by eclamptic attacks in no wise differing from those where nephritis is positively present.

On examining the urine in these cases, however, as above, we find that there is a constant diminution in the total output

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of urea, and this enables us to judge with fair accuracy of the functional capacity of the kidneys with reference to the excretion of other toxines.

It must be remembered that the system of the gravid woman undergoes a radical change which, while ordinarily a physiological phenomenon, easily borders on the pathological, and it is furthermore easy to see that the increased morbidity of the blood, coincident with her unusual processes of tissue change and the increasing eliminative discharge from the growing fetus into the maternal blood stream, would necessarily establish a condition of less stable equilibrium and greatly increase the liability of the kidneys to irritation and consequent morbid change, or to irritation and accentuation of an inflammatory process antedating pregnancy, or to irritation and suspension of function without gross or microscopical lesions.

In all of these instances, however, the disease is the same in kind, so far as the picture of eclampsia is concerned, and merely differ in the less important details of its accomplishment.

Whether an actual nephritis develops during pregnancy with attendant toxæmia, whether nephritis existed previous to pregnancy and in the new conditions finds burdens which its weakened state cannot support, or whether in rare instances pregnancy entails sacrifices of labor which the kidneys previously normal are unable to meet, the net result is without difference, for the blood is surcharged with deadly poisons and we have the condition *tóxæmia*—eclampsia.

It has been asserted in some quarters, with apparent propriety, that in exceptional instances the toxæmic condition of the blood is itself directly accountable for the morbid state of the kidneys.

Of importance as contributory evidence of the toxæmic nature of eclampsia, is the fact that the death of the fetus is in many instances followed by cessation of the convulsions, from which it is deduced that the fetus has furnished a definite share of refuse to the maternal blood through the placenta, which

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death puts a stop to, and which no longer thrown into the circulation enables nature to regain her equipoise.

It is well to bear in mind that the toxæmia may be acute or chronic, and that the urine may show evidences of renal insufficiency long before premonitory symptoms warn us of an impending attack. This suggests the absolute necessity for making frequent examination of the urine in all pregnant women.

In the end, let me offer this summary:

I. Eclampsia is the result of blood poisoning from the retention in the blood of excrementitious substances, which should have been excreted. The poison is both maternal and fetal.

II. The kidneys are the organs *usually* at fault, and present the ordinary evidences of nephritis in the urine.

III. The kidneys in some instances do not undergo organic change, but have their function as eliminators wholly or in part suspended. The clinical picture is much the same as the above, but the progress is probably of far less gravity, as we may hope to more completely re-establish functional activity than if the organs were in varying degrees of organic change.

IV. The skin, intestines and lungs are valuable, and frequently under-rated, organs of elimination. Their departure from the normal may frequently foreshadow an eclamptic explosion. Conversely careful conservations of their activities may remove sufficient burden from the kidneys, to enable the latter to pass safely by and to the end of pregnancy and the puerperium.

V. The liver is materially concerned in a certain proportion of cases, and abeyance of its function is then of importance in connection with the above.

VI. Frequent examination of the urine is necessary, and the total amount of urea should be carefully measured. Evident diminution in the quantity of urea, even in the absence of albumen casts, etc., should excite suspicion, and suggest further attention to complementary functions.

VII. Finally, careful attention to the hygiene of pregnancy, and the correction of minor deflections in the functions as they

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arise, will most completly ensure a normal relationship between toxine formation and toxine elimination, and prevent the development of the blood condition toxæmia.

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SYMPTOMATOLOGY OF PUERPERAL ECLAMPSIA.

T. W. SHEARER, M. D.,

WALLISVILLE, TEXAS.

By puerperal eclampsia we mean eclampsia occurring during pregnancy or immediately afterward. This may occur at any time during gestation, but is more prone to occur during accouchement, or very soon afterward. We would not include in this class the various cases of eclampsia that might be accidental, or due to other, and distinct causes, as epilepsy, chorea, hysteria, etc., basing our diagnosis upon the symptomatology and frequency of these attacks at other times in individuals subject to these disorders, taking into consideration the possibility of puerperal eclampsia.

Prodromal symptoms are more often present when eclampsia occurs during the course of pregnancy than at the time of parturition or subsequently, and prominently among these are cephalgia, usually frontal, defects of vision, as diplopia, indistinct vision or blindness, dyspnœa, and epigastric pain. I am inclined to attach considerable importance to severe headache, vertigo, and partial or complete loss of vision.

Some times insomnia will precede an attack of eclampsia. Albumenuria is a prodromal symptom of much importance. While every case of albumenuria does not result in puerperal eclampsia, it is extremely probable that cases of eclampsia may and do occur without the appearance of albumenuria, the integrity of the vessels and secreting cells of the kidneys being good, insufficiency does not occur even though the system is overloaded with urea.

Again it is well to eliminate all possible chances of error before attaching grave importance to albumenuria by knowing that it results from insufficiency of the kidneys, and not from urethritis, cystitis, pyelitis, leucorrhœa, etc.

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The author is strongly of the opinion that albumenuria would eventually be symptomatic of all cases of puerperal eclampsia should the causal relations exist for a long enough time to injure the parenchymia of the kidneys. The fact that the parenchymatous structure of the kidneys is strong enough to resist the escape of albumen or blood cells for a time does not prove that the blood may not be surcharged with urea, and other products of nitrogenous metabolism which are capable of producing the phenomena attending puerperal eclampsia. But more often the secreting cells of the kidney become congested, and less capable to perform the extra work entailed upon them, insufficiency occurs, and albumenuria results. Albumenuria occurs in about ten per cent of all pregnancies and eclampsia occurs once in about three hundred and fifty pregnancies, which leave quite a discrepancy between the two in point of number, but how many of these cases are due to diseases of the heart, liver, lungs, Bright's disease, the sexual or urinary organs, etc., etc., the statistician (Auvard) does not say. However we are inclined to consider albumenuria the most important symptom of puerperal eclampsia, although we believe that pregnancy in some manner at times arrests or interferes with the nitrogenous metabolism of the organism resulting in the accumulation of intermediate products of oxidation as creatine, creatinin, or other products that are even more poisonous than urea.

The above symptoms may be premonitory for some weeks or days; yet in many cases there are only a few hours or minutes, or no warning at all before the eclampsic attack. Some involuntary twitching of the facial muscles and rolling of the eyes quickly followed by a tonic convulsion which may or may not be opisthotonus or pleurothotonus in character, depending mainly upon the severity and the muscles involved. This in a short time gives way to clonic convulsive movements of the entire body, the convulsive movements growing less violent until they cease, which is generally in a few minutes, consciousness usually returns unless the first seizure is rapidly followed by

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others, in which case consciousness may not return and a series of convulsions is followed by a deep sleep. There is usually a temperature, and if the tongue is lacerated bloody froth may issue from the mouth. The puerperal convulsions resemble epilepsy in many particulars; there may be only one, or many may recur in rapid succession. The breathing becomes more or less stertorous, followed by profound coma. Death may result from asphyxia due to prolonged contraction of the respiratory muscles, or the shock to brain and sympathetic nervous system may be so severe as to paralyze the heart's action, and heart failure ends the scene, or a general enfeeblement of body and mind results, which may terminate fatally some weeks afterwards.

The author has had four cases of puerperal eclampsia, two of which occurred during accouchement, and two shortly after delivery.

Albumenuria was present in every case, severe cephalgia frontal in three, occipital in one. Dimness of vision and sudden attacks of vertigo with blindness occurred in two of the above cases. One suffered with dispnœa. Two recovered rapidly, one having three or four other convulsions, all the convulsions occurring within six hours; there was extreme nervousness and little coma. One died on the second day after delivery in a tonic spasm, the first and only convulsion after delivery. The fourth and last case had sixteen or eighteen convulsions, extending over a period of three weeks, and was comatose most of the time with intervals of consciousness in which she suffered with cephalgia and extreme nervousness. The urine was examined often in this case, and the condition of the kidneys seemed to serve as a barometric indication of the case; as they improved the patient grew better and recovered. All the cases reported were primipera, and all young, otherwise healthy women.

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THE EYE SYMPTOMS OF PUERPERAL ECLAMPSIA.

VARD H. HULEN, A. M., M. D.,
GALVESTON, TEXAS.

The eye symptoms in puerperal eclampsia are few but very important, because they are often premonitory and if recognized in time impending eclampsia may be averted by prompt and active measures.

There may be œdema of the eyelids, at first only transitory, later it becomes constant. Rarely is chemosis seen, and it is possible to find subconjunctival hemorrhages in a few cases.

The eye symptom of greatest importance is that of disturbance of vision. This symptom may be the most important of the three important premonitory symptoms: epigastric pains, headache and disturbance of vision. Because the first two may be easily overlooked as they occur so often and portend no evil. But whenever a pregnant woman complains of some disturbance of her sight a careful physician will investigate the condition of her kidneys at once, be the complaint ever so slight or transitory. The disturbance of vision varies greatly in different cases from very slight to almost total blindness. And as a rule, in case of recovery of the patient the sight is usually fully restored in time, and often in a very short space of time. The disturbance of vision is often very disproportionate to the lesion seen in the fundus of the eye.

The ophthalmoscopic picture seen in this condition is characteristic of the disease commonly spoken of as "Albumenuria," and depends on the stage of development when seen. The distinctive features are whitish patches and hemorrhages; these may occur together or separately. In albumenuric retinitis or neuro-retinitis these will at first be noticed in the region of the macula and near by or upon the papilla. Later they increase in number and form a stellate figure about the fovea

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centralis. The latter usually remains visible as a red spot, though the hemorrhages and white patches increase greatly. The lesions diminish rapidly in number towards the periphery of the eye ground. A few patches disappear and new ones form, the tendency being to increase in number. The glistening stellate appearance is so characteristic that if once seen cannot thereafter be mistaken. The lesion of the retina may be so marked that there is an appearance of detachment. The stress of the lesion may fall upon the optic nerve; we will then find it red, swollen and infiltrated with formation of many new vessels. The typical appearance of "choked disc" may be present. Much more might be profitably said on this important subject, but I wish to present the vital points in the briefest way possible.

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TREATMENT OF ECLAMPSIA.

W. R. BLAILOCK, M. D.,
M'GREGOR, TEXAS.

As eclampsia may occur before, during or after confinement, it will be best to consider the treatment from each of these periods.

With no desire to trespass upon the ground assigned another, I will refer briefly to some recent opinions that have been advanced anent the causation of the disease. Dr. P. Kollman (in Cent. Bl. fur Gynacol., 1897) says he does not attribute eclampsia to retrograde nitrogenous changes found in the blood, but to a disproportion of the physiological constituents of the blood—the accumulation of fibrinous material in globulin or its derivations which may be found in the venous blood of eclampsia. This autointoxication has its origin in nephritis or mechanical obstruction which prevents the elimination of the poisonous fibrinous and nitrogenous elements which originate both in the maternal and fetal cells.

Allbut, in the Lancet, 1897, opposes the hypothesis that pressure upon the uriniferous tubules or nephritic veins by the gravid uterus or spasm of the nephritic arteries would cause eclampsia, but believes the accumulation of poisonous material in the blood produces the changes in the kidney.

He accounts for the greater number of cases occurring in primipara, not from reflex spasm from the uterus, but from lack of immunity. In multipara he holds that the toxines circulating in the blood have to a certain extent produced immunity. Vollhard (Mon-Sehr of Geburtsh in Gynacol., 1897) experimented on rabbits with the serum and urine of healthy and eclampsic patients. He got negative results from the serum, but with the urine, in two cases, intra-venous injections produced coagulation during life. He says if this property of the

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urine in labor or eclampsia is verified by subsequent experiments Schmorl's theory that eclampsia is due to autointoxication by an irritating coagulating substance will be tenable. The exact cause of eclampsia seems no nearer a solution than it was ten years ago. The whole trend of opinion is toward the acceptance of a poison in the blood as the cause.

Eclampsia being so universally associated with albumenuria whenever albumen is found in the urine of a pregnant woman it should be regarded as a warning that eclampsia may occur during gestation, parturition or the puerperium. In approaching the treatment of a disease attended by such violent symptoms and such a high mortality, preventive treatment is of the greatest importance.

It is a matter of no slight importance that we have in a measure a successful preventive treatment. When a pregnant woman has albumen in her urine she should at once be placed upon a milk diet, which should be continued until the albumen disappears. Every few days a dose of mineral water or other mild laxative should be given; bismuth, saline, salol, benzonaphthol and occasionally some mercural salt to keep alimentary-canal disinfected. After the urine is free from albumen, tonics such as quinine, gentian or iron may begiven. If albumen reappears resort again to milk diet.

In a word every case should be exercised to keep the different organs of the body in a state of healthy equilibrium.

If as sometimes happens, milk is not tolerated by the patient, bleeding may be tried, wet cups applied to the lumbar region, vapor baths.

If all these preventive measures fail, or if they have not been employed and an attack of eclampsia come on before term what shall we do?

The first thing is to prevent a recurrence if possible consistent with the continuance of the patient's life.

Chloroform, chloral, morphine, veratrum, and other remedies, have been recommended. The room should be well ven-

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tilated, the clothing loosened, and the bladder examined to ascertain whether or not it is distended by urine.

The first duty, however, is to administer some medicine that will control the convulsions as much as possible consistent with a continuance of the patient's life.

Morphine, I think, has no place in the treatment of eclampsia. Veratrum veridi has its advocates; it is given hypodermically, in sufficient doses to bring down and maintain the pulse at about 55 or 60 beats per minute. I have no personal experience with it in eclampsia.

Chloroform, when pushed, which must be done to get its effects, will usually control the paroxysms, but if continued for any great length of time, it becomes a question not always easy to decide, which is the worse, the disease or the remedy.

Of all remedies, according to the statistics which I have examined, chloral, given alone, has been followed by the best results. By rectum is the only practical way to administer chloral.

Dissolve 150 grs. of chloral in 10 ozs. of pure water; inject 4 ozs. into the rectum. Then every fifteen to thirty minutes inject 1 oz. until convulsions cease, or until the whole amount is given. If the convulsions continue, it is best to wait a few hours, provided the medicine has all been retained, before giving more. Another way to give chloral, which varies slightly from the above, is to give 60 grs. by enema. If this is only partly retained, give a second or a third dose of 60 grs. Wait five or six hours, and if necessary give another 60 gr. dose.

At the end of twenty-four hours, in either case, it is well to give another dose of chloral.

Too frequent examinations should not be made, nor should the patient be restrained by holding the hands and feet, as these maneuvers tend to excite recurrences. The tongue should be protected by holding a cork or soft piece of wood between the teeth during the attack.

If the convulsions cease and the child is still alive the subsequent treatment up to term should be the same as when albu-

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men is found before the inception of eclampsia, which has already been given. If, however, the child is dead, or the attacks show a tendency to continue the uterus should be emptied with as little delay as possible. It the attack occurs at term the same treatment should be instituted and the same attention given to ventilation and emptying of the bladder.

The uterus should be emptied of its contents as soon as practical.

The necessity for speedy emptying of the uterus may call for a temporary administration of chloroform, but this should be discontinued as soon as possible and chloral substituted. If the attacks continue after the administration by rectum of 150 grains chloral and the temperature is high and the pulse strong, additional doses may be given until 180 to 200 grains have been given during the course of twenty-four hours.

A case is reported by Charpentier, in which 180 grains were given in ten hours and the patient made a good recovery. If too much chloral should be given strychnia may be given to counteract the excessive effects.

The subsequent treatment should be directed to keeping bowels and kidneys active, lochial discharge normal, and to the improvement of the blood by the administration of tonics and iron. A combination that has given the best results in my hands as a blood purifier during the puerperium is about the following:

℞ Potass Chlor.....ʒij
Aqua.....ʒij
Tr. Ferri. Mur.....ʒiij
Syr. Lemon.....ad ʒiv
M. Sig. Teaspoonful in water every four hours.

The diet should consist for some days mostly of milk so as to not overtax the digestive and eliminative organs, however it will not be well to adhere so strictly to a milk diet as during preventive treatment.

If eclampsia occur during the puerperium, the same reme-

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dies used at confinement should be employed. Give calomel so as to get copious actions from the bowel, apply hot stupes to the abdomen, and give warm vaginal douches. If the lochia is offensive irrigate the endometrum with warm water, and remove clots or pieces of placenta if present, with a curette.

DISCUSSION.

DR. J. H. SEARS: It is not my intention to discuss the generally received etiology of puerperal eclampsia, but only intend to call your attention to a cause not made sufficiently prominent in any of our text books—a lesson from my own experience—where patients have been under observation and the secretions and excretions have been kept in a proper condition as possible by our art and hygiene; these ladies near the approach of full time—in perfect health—have imprudently partaken a mixed meal of most indigestible substances for supper, retired and gone to sleep, waking up in the night with headache, sick-stomach and vomiting and soon a fearful convulsion, repeating itself at short intervals, unless prevented by proper and prompt treatment.

Here we have convulsions induced or produced by an over-loaded acid stomach as in children, by pressure on the solar plexus or abdominal brain, the absorption of ptomaines or toxines into the blood. Here the convulsions seem to be similar to those of infants and children, i. e., from a similar cause; but the state or condition of the woman seems to obtain the character and continuation of the convulsive movements and makes them puerperal.

The point that I wish to impress upon the mind of my professional brethren is that a perfectly healthy woman, in a puerperal state, may be precipitated into convulsions by a single ill advised meal, whether from poisonous ptomaines or toxines introduced into the blood, disturbing the convulsive center or pressure on the solar plexus acting by reflex action on the convulsive center, or from an unstable and easily disturbed condition induced by the puerperal state, I do not know. It would seem that the nervous system of the pregnant woman is very much like that of childhood, easily disturbed by indigestible or improper food stuffs introduced into the stomach; that the pressure intra or extra-uterine may be a factor in the convulsive seizure is not doubted. I do not care to discuss the treatment.

DR. M. M. SMITH: I agree with Dr. Blailock to a certain extent in his treatment of eclampsia, but beg to differ with him as to the use of chloral; if I gave it at all, I would give small doses; I do not believe I would give it in the size doses that he advises per rectum, as I think a dose of that size would start up some inflammatory action.

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I think the greatest of all medicines at the time of the attack is veratrum viride, given hyperdomatically. I also believe in using chloroform by inhalation, bnt I think the great element is veratrum viride, instead of chloral. I believe that it is almost universally accepted now.

I suggest that the doctor try this treatment before he advises us so strongly to use chloral.

I think, like the doctor, that it is not good to use hyperdomatics of morphine, but I think veratrum is of great benefit.

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CONGENITAL DEFORMITY—REPORT OF CASES.

E. J. NEATHERY, M. D.,
VAN ALSTYNE, TEXAS.

With your kind indulgence I will briefly report a few cases which have come under my observation of late. On the 2d day of January, I was requested to see a case of labor with a neighboring physician.

The lady was a 4-para, with children all well formed and healthy. On examination a hand was found presenting—a condition that was not new to the physician in charge. Chloroform was administered, the hand pushed back and podalic version was attempted, but upon introducing the hand the feet were found to be doubled back on the posterior aspect of the child, and no amount of manipulation would bring them over on the anterior surface. We decided to make traction any way, and after exerting decided force for some time, something gave way with a sharp sound that was audible several yards away, and the child rapidly descended and was delivered in a few minutes without further trouble. The spine was bent acutely about the junction of the last dorsal and first lumbar vertebra, with the feet resting on the posterior aspect of head as found before delivery.

The head, upper part of trunk and extremities were all well formed, but the entire abdominal wall with a part of the chest wall were absent, reaching from the arch of the pubes including the anterior part of the penis, to the ensiform cartilage and extending higher on the left side, exposing the heart, lower border of both lungs and the entire abdominal viscera. The placenta was normal except complete absence of cord, and was attached direct to the liver, which in giving way, caused the sound above referred to. The viscera was normal as far as I could ascertain. The monster lived about forty minutes, with the heart beating

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apparently, with all the beauty that it would have done in the chest cavity. I was unable to preserve the specimen.

On July 11, was called to see Mrs. B., a 2-para, in her third labor. On examination I found her in the first stage of labor with what I first thought to be a breech presentation. On making the second examination as labor progressed, I was very much puzzled for a few minutes to determine what was presenting, as I could feel a soft, round area surrounded by sharp bony protuberances. After outlining the mouth and eyes I was able to make a diagnosis of anancephelis or complete absence of brain and cranial vault, which contrary to the usual rule, was easily and speedily delivered. Father, mother and all children healthy. I was unable to retain the specimen, which had the usual short neck, with face looking almost directly upward.

On November 30, was called to see Mrs. T., a 4-para, aged 32, in labor. Child was born when I arrived, but cord had not been severed, and mother remarked that something was wrong with it. On examination found a case of exancephelis or complete absence of cranial bones, but brain apparently well developed, though very much elongated and distorted from pressure. The brain was covered with a glistening membrane which was the continuation of the skin, but was entirely devoid of hair or follicles. The child was breathing about eight times per minute, and continued to live and breathe very irregularly for about sixty-four hours. It was my intention to let it bleed to death, but the cord had ceased to pulsate and would not bleed a drop, although I left it untied. Father and mother both healthy, as well as all the children. I was unable to retain the specimen.

On the 12th day of November, 1897, Mrs. T., a 2-para, presented her infant four weeks old for treatment. The case presented two tumors as large as hen eggs over the parietal eminences. I found a round opening in the skull under each, as large as a silver half dollar. I diagnosed the case as one of double encephoceale and immediately applied compresses, and in three months saw case again and found no trace of former trouble. The head was quite large at birth and mother sus-

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tained complete laceration, but physician in attendance could give no history of presentation as labor was over when he arrived.

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SECTION ON SURGERY.

THE PRESENT POSITION OF SURGERY IN ITS RELATION TO MEDICINE.

REPORT OF CHAIRMAN.

B. E. HADRA, M. D.,
SAN ANTONIO, TEXAS.

In briefly surveying the changes which have taken place during the last year and the period just preceding it, with special reference to the interchange between surgery and practice, I may state that the encroachment of the former into the realms of the latter has steadily progressed with only one exception, and that is in brain surgery. Here the much too active inclination of the surgeon has somewhat receded on account of the warnings of the most experienced authorities, who have clearly shown that under existing conditions of diagnosis many of the deeper seated or of the more extensive new growths will either not be found or not be made approachable by the knife. This field of cutting treatment must therefore be greatly narrowed. The same appertains to surgery for epilepsy unless the localization is perfect or visible traumatism is responsible. On the other hand, abscess following otitis has become better defined as to locality and accessibility, and will, I trust, soon become one of the best worked out and most successful surgical acts when early undertaken.

In the treatment of lung diseases further conquests have been made by surgery, at least attempts in this direction have been pushed more vigorously, especially by French surgeons, as for the treatment of abscesses, gangrene, foreign bodies, etc., by direct intervention. The diagnosis of pulmonary malignant

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growths has also improved. The pluera, too, is more actively attacked than formerly, as is the heart for injuries. Drainage of the pericardium, though, has not yet become a procedure free from objections.

The internist sustained his greatest loss when it was demonstrated that the supra-renal capsule could be removed with perfect success. There have been two such cases reported, one by a German and the other by an American. The pancreas has become the object of still further surgical interference, too. So has the liver been still further conquered by the surgeon, since great portions of it have been safely removed. The internist's loss in this field may be great in the future.

It is hardly necessary to add that surgery of the stomach and intestines has widened, and that consequently treatment by drugs has diminished. The rectum and bladder have been made more accessible to direct inspection, and this again cannot fail to open new fields for surgery, or rather widen the old ones.

Thus we see that surgery is expanding in every direction at the cost of what only a short while ago was considered the natural domain of the internist. In fact so much has crumbled off of the proud edifice of the practice of medicine that one is reminded of the prophetic words of Billroth, who exclaimed that "all medicine has to become surgical." Though we know this expression to be somewhat hyperbolical it is nevertheless highly interesting for us to analyze these changes and to investigate the future conditions which must necessarily result from them.

Evidently the old division line between drugs and the knife has been so much transgressed and infringed upon that former medical education, medical views and customs must of necessity be rearranged. Laying aside the old field of surgery which consisted mainly in attention to wounds and accidents, to removal of new growths and to the mending of visible abnormalities; the maintainance of strict limits between surgery and the purely medical work is impossible and has de facto already been broken by the following specialties: opthalmology, rhinolgy,

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laryngology, otology, genito-urinary work, orthopedics and most strikingly by gynecology. In these branches a perfect union between the internist and the surgeon has developed and the idea that there should be two different kinds of occulists for instance or gynecologists would receive nothing but ridicule.

If we now deduct the above mentioned field of old surgery and on the other hand constitutional and infectious diseases as special work of the medical man, a list of organs remains whose administration is still divided up between the two—the internist and the surgeon. The former is usually charged with the diagnosis and with the attempt to remedy the disease with drugs, whilst the latter is called in more or less late to apply his direct cutting methods; or if called first may direct the patient to a medical brother for his opinion before proceeding.

Now judging from the rapid progress that the foregoing specialties have made, it would seem that the old methods still persisting, especially in diseases of the thoracic, abdominal and great nervous organs, will, both to the advantage of the patient and doctor, cease also in these latter branches. The dividing line between practice and surgery will be abolished and the object of treatment alone will determine the division.

Diseases of the stomach, for instance, will not be made to appear medical or surgical, but simply diseases of this organ, to be understood and to be treated by the man who is master of the whole field and able to select from his stock that which he considers the most appropriate. It is readily apparent that the patient will then be under the care of one who is not one-sided, partial and narrow-minded in his views, and also that the attending physician will be less liable to overlook certain points or be ignorant of certain procedures and views which would otherwise necessarily escape his attention.

At the first glance such a revolution would appear chimerical, but in reality this transformation is now gradually taking place. It is not at all necessary to fear that the general practitioner who to a certain degree must have a fair knowledge of everything, would suffer in his capacity. He will still hold his own

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with the additional advantage that he will have all his knowledge better arranged. He will be able to apply this knowledge more concentratedly to the organ to be treated because he will be able to view his object more comprehensively from all sides at once.

Naturally there will always be some of us who will be more inclined toward active interference and to the knife, and others to less severe methods; and some on account of their environments, their greater opportunities, greater experience due to residence in large cities or by serving in large hospitals, will be more dexterous in the execution of operations. But this is the case now and always has been so. The latter will continue to be called upon in many a case to perform the bloody work by their less experienced colleagues who, however, will hold the same views, draw the same conclusions, agree upon the necessity for such interference and so on. The practitioner who shuns surgery altogether will have to confine himself to the great field of systemic and infectious diseases proper.

The most striking changes would be those in our text-book and in the methods of teaching. The former would have to be arranged like those in gynecology, comprising everything pertaining to the subject. The professor of nervous diseases at a college would have to be competent to perform operations on the brain and cord. The professor of thoracic organs would have to teach practice and surgery of the heart, lungs, etc.; another treat the abdominal organs in the same way, an innovation which is already developing quite visibly. General pathology, general surgery, pathological anatomy and bacteriology, and other preparatory studies, will hold the whole structure of medicine together so that the connection of these divisions and a general understanding of the dependency of the organs upon each other will be brought out and kept before the eye of the student just as prominently. There is also no reason why the same teacher should only confine himself to one of these divisions.

But it would be only an imposition upon your time were I to

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depict minutely, in a more or less arbitrary manner, the steps which this evolution will take. May these few lines only serve to call your attention to the necessity of giving up the old idea that the same trouble should be differently viewed by a surgeon and by a general practitioner. There is only one way to approach a disease, and that is through and from every standpoint.

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SURGICAL TREATMENT OF EMPYEMA INCLUDING PHLEBOTOMY OF LUNG.

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This brief paper is based upon a personal experience with a few cases of empyema, and without going further into the etiology of the subject than to state that most cases of empyema are secondary to pneumonia, pleurisy or tuberculosis, or due to some form of traumatism necrosis or infection. The prognosis of the disease is much more favorable than in former years, and especially is this the case since the introduction of antiseptic surgery, knowing as we do, that pus wherever found means the presence of one or more of the pyogenic microbes.

As soon as pus is discovered in the pleural cavity, it should be removed. Should we have reason to believe that the quantity is small and of the seropurulent type it can be removed by aspiration. This in the main, applies to acute cases. If the pus recurs the pleural cavity should be opened at once, and proper drainage established. Free incision and drainage should be resorted to in all chronic cases.

It is probably best not to irrigate in acute cases, and in chronic cases as long as there is constant and rapid improvement after drainage is established. The indications for irrigation are rapid pulse, erratic temperature, prolonged continuance of discharge, and lack of rapid general improvement. The pleural cavity should be opened at the most dependant part, usually midway between the sternal and vertebral attachments of the rib, and whatever mode of drainage is adopted it should be free and complete. I have always obtained good drainage by making a free incision and inserting a rubber drainage tube a half inch in diameter, making this fast to the skin with a safety pin and placing inside of the rubber tube a smaller glass

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tube bent at right angles. Where irrigation is necessary, remove the glass tube and irrigate with a straight tube of smaller size which, with the rubber tube, makes a return flow irrigator. If we are to irrigate, it is proper to ask the question: "What are we to use?"

Wyeth uses bichloride of mercury 1 to 3000 or even 1 to 1000 with good results and no poisonous symptoms. This would indicate that the pleura is no more sensitive than other similar organs of the body; although I would much prefer to use boiled water, borated water or $\frac{1}{50}$ to $\frac{1}{20}$ solution of hydrogen peroxide. The cavity should be irrigated through by using from one to several gallons of solution, or until the return flow is clear and no longer contains pus. This is not usually required oftener than two or three times a week although cases occur that require daily irrigation for a time; these are cases where there is great alteration of the pleura, and may require curettage to hasten the cure.

The lung is always more or less collapsed in cases that have continued for any length of time, and the process of reinflation is gradual. A lung that has been rendered perfectly useless will largely regain its resilience and usefulness where serious structural changes have not occurred, in which case the lung will fail to fill up the pleural cavity entirely, the case will be more chronic, and may require a plastic operation similar to the procedure known as Eastlander's. However, this is the exception. It is needless to add that any operative procedure should be done under rigid rules for cleanliness, and the wounds dressed antiseptically.

Report of Cases.—Case No. 1.—G. B., a native Texan, age 19, white; had suffered a long time with symptoms of phthisis, high temperature, cough, excessive expectoration and pain in the side. I saw this case in the last stage of disease, a bronchial fistula already existed. We proposed the operation for empyema which was refused, and in a few days during a paroxysm of coughing the fistulous opening suddenly enlarged, and he died of asphyxia while expectorating large quantities of pus.

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Case No. 2.*—H. F., aged 20 months, white, native of Texas. She developed empyema from a pleuritic effusion complicating typhoid fever. The pleural cavity was opened by free incision, one pint of pus evacuated; no other means of drainage was used, and no irrigation. The opening discharged pus about ten days, and closed with no further trouble. The patient rapidly recovered health.

Case No. 3.—N. S., age 17, white, native of Iowa. She contracted pneumonia during the month of April, 1896. Was treated for the same by physicians in Iowa. Did not entirely recover from the attack. She lapsed into a debilitated condition with a harassing cough. She came south for her health the following October, arriving about that time in Galveston. She was examined by two physicians of unquestioned ability in that city, and a very unfavorable prognosis given. In fact her case was pronounced one of advanced tuberculosis. Although the expectorated material, which was abundant, did not disclose the presence of the tubercle bacillus. She had for a long time been unable to lie in the horizontal position, having slept in a reclining chair for about eight months, although she was up and about for the greater portion of the day.

During the winter of 1896 and '97 the patient was seen by me and being related to her by direct sanguinity, and knowing her family history, both grandparents on both sides being still alive and well, and no intermediate cases of tuberculosis; I did not believe it to be a case of acquired tuberculosis. After making several examinations of sputa at different times, each time failing to find the tubercle bacillus, but finding the pneumococcus of Friedlander, and a host of pyogenic microbes, and among them streptococcus pyogenes, bacillus pyogenes fœtidus, and pyocyaneous which is always present in blue pus, and in size and appearance much resembles bacillus tuberculosis. The presence of these bacilli led us to suspect empyema with a probable bronchial fistula, besides the patient had a pus temperature, and

*Reported as one of thirteen cases of typhoid fever in transactions of State Med. Ass'n of Texas, 1893, page 143.

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dark muddy cyanotic appearance with more or less pain in left side. The pleural cavity was opened under cocaine anæsthesia, and a large quantity of blue pus evacuated. No further drainage was used for some time, there was considerable improvement, but a rapid pulse, and erratic temperature, with continued discharge indicated that further drainage was necessary. The patient was anæsthized with chloroform and the opening enlarged, a rubber drainage tube half inch inside calibre inserted and pinned to the side of the wound. The pleural cavity was then irrigated with warm sterilized water until the return flow was clear, and no longer contained pus. The cavity was then flushed with a solution of peroxide of hydrogen, one to twenty, a piece of glass tubing bent at right angles was inserted into the rubber drain to keep the same well open and the wound dressed with iodoform gauze and borated cotton. The pleural cavity was again irrigated upon the third day, and one week from this time the discharge had about ceased. The tube was removed, and the wound sealed with collodion and cotton. The patient at this time seemed to be suffering very much from cyanosis and dyspnœa. There was dullness upon the opposite or right side. Thinking that perhaps some of the fluid used in irrigation had become pocketed upon this side, or that there was a fresh pleuritic effusion an aspirating needle was passed into the pleural cavity. No fluid was found. The needle was passed into the right lung which was edematous, an ounce of dark venous blood was drawn off and the needle withdrawn. This last procedure seemed to have a remarkable effect upon the case. In six hours the breathing was greatly improved. The cyanosis disappeared gradually and without any further surgical interference the case progressed rapidly to a most favorable termination. She has now been perfectly well for nearly a year, and weighs more than any of her three sisters of which she is the youngest. There is, however, some slight difference in the two sides, the left lung not having entirely recovered from the collapsed condition.

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SUBCUTANEOUS ARTERIAL LIGATION.

THOS. JAY PUGH, M. D.,

HEARNE, TEXAS.

I will not attempt to hold the members of our profession with a long talk on subcutaneous arterial ligation. It is a new mode of tying arteries, very simple, and to my mind it is less objectionable than the old way of cutting down through the skin and tissue to the vessel.

Objections might be raised to this mode of procedure; yet when we remember that it is *results* that we want, and when all reports on this form of operation give perfect results, then of just reason, this operation takes precedent as the correct one. Of course when amputations must be performed, and abdominal sections made, the vessels are brought to view by the incisions necessary in these operations; but in minor wounds of the extremities, also of the neck and head, subcutaneous arterial ligation can be resorted to; and even in amputations of the femur, at any one of its subdivisions, I would not hesitate to throw a ligature subcutaneously around the femoral artery as a temporary hæmostatic. The large, well-curved needle, armed with a stable aseptic thread, could, after perfect anesthesia, be passed down through the skin and underlying tissue, taking in its course muscle, artery, vein and nerve. But with these preliminary remarks I will proceed to relate my experience in this digression from the old into the new way.

First case in 1884.—A man 40 years old caught in the moving machinery of the Cavitt plantation near Mumford, Texas. All the metacarpal bones of the hand were broken. The radial and ulnar bones were broken in the middle and lower third, and the bones were split up and protruded through the bruised and lacerated flesh. The os-humerus was also broken above the elbow. Amputation being called for, I did

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the operation at the upper third of the forearm, and put the broken os-humerus in paste-board splints and bandages. After tying the principal arteries, the ulnar and radial, I found there was another bleeding vessel which I could not find and tie, and in my dilemma I conceived the idea of *subcutaneous arterial ligation.* Acting upon this idea, I simply passed a curved needle, with ligature, into and around the mass and tied the same. The bleeding was immediately controlled, and the man, without much pain, recovered entirely.

This success being all that could be desired I was prompted to use it in other injuries of the arteries calling for ligation.

My next case was in June, 1892.—Taylor Whitehead a white man who, some six days previous to my visit, had cut a long deep gash in his foot, severing the dorsalis pedis artery. Local astringents and compression had been used for six days and nights with no good results, I had been called in consultation with the attending physician in this case. It was suggested that we cut down on the anterior tibial artery at the lower third, and tie the artery. I objected, as I thought *cutting was unnecessary.* The attending physician left the matter with me, and after having Dr. Erwin chloroform the patient, I passed a large curved needle with strong silk around the artery and cut on the opposite side from entrance. This of course included the skin, muscles, nerves and blood vessels. The hemorrhage ceased at once. The stitch or ligature was withdrawn on the fourth day and the patient made a rapid recovery. A third case, Patsey Moore, injured in a railroad wreck near Hearne in 1893.

The radial artery was cut some two inches above the wrist. The hemorrhage was profuse. I ligated the artery both below and above the site of injury. Subcutaneous arterial ligation was used in this as in the other cases. No less authority than Dr. S. S. Thorn of Toledo, Ohio, an ex-president of the American Railway Surgeons' Association, has written me a special letter of commendation of my operation. The doctor also gives me priority in the operation and in reporting the same.

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We have been taught not to include a nerve in our ligature, and, for my part, if I could see the nerve and artery, I would not tie the two together. But I hold that in my operation—subcutaneous arterial ligation—no harm comes from including the nerve with the vein, artery and muscle. All of this tissue, sufficiently tight around the bleeding vessel to insure its hæmostatic power, surely guards against any pain being given out from the nerve; the pain is at least so slight as to be controlled with small doses of morphine every six or eight hours.

In conclusion, I will say several physicians of my acquaintance have used this mode of tying arteries, and in every case with perfect satisfaction.

In the oseous or degenerate artery this mode of ligature is especially called for.

The army surgeon should adopt this operation because of its success and rapid application.

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REPORT OF TWO CASES OF APPENDICITIS—ONE TRAUMATIC THE OTHER HEREDITARY.

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M'GREGOR, TEXAS.

For the past ten years no part of human anatomy has received so much attention as the little rootlet attached to the head of the colon, known as the vermiform appendix.

The wonder is that any one has a healthy appendix since attention both in the newspapers and the medical journals has been so constantly directed to it.

No medical society has been able in recent years to steer through many successive meetings without running up against a paper or papers discussing this little unruly worm and its attendant pathological conditions.

An esteemed and highly accomplished member of this Association who reached the end of life's pilgrimage about five years ago, suggested the removal of the appendix in early life, before it has given any trouble, on the ground that its removal, extending through a few generations might result in its extermination just as the chopping off of dogs' tails produces a generation of bob-tail dogs.

I am often inclined to express a willingness for a test to be made of his suggestion when brought in contact with a neglected case of appendicitis after perforation has taken place.

The object of this paper, however, is not to enter in extenso into a discussion of the appendix, physiological and pathological, but merely to report two cases, one believed by the writer to be traumatic, the other hereditary, and to show the organ removed in each case.

B. C., male, age 24 years, family history good, was in fine health up to his eighteenth year, when in a game of ball he was struck in the abdomen on the right side between the umbilicus

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and the crest of the ilium. A soreness and tenderness set up in this side which continued. He had attacks of what he supposed was colic, recurring at first two or three times a year, then getting more frequent until the recurrences were monthly.

I saw him first January 10, 1897, he was suffering intensely, although he had taken per orum about one grain of morphine during the preceding three or four hours.

The stools had been scanty and hard for several days, but no tumor could be detected in or around the cæcum. Pressure over the appendix produced severe pain. A diagnosis of appendicitis was made and an operation advised, which was declined. The bowel was moved by clysters of warm water; the pain mitigated by heroic doses of morphine hypodermically, aided by hot applications over the abdomen.

March 12 another attack began. This time, however, the bowel was open, but for supper he had partaken freely of raw onions or shalots. His suffering was severe except when fully under morphine until March 20, he consented to an operation. At this time temperature was 102° F., pulse 110 per minute. The appendix, two inches long and three-quarters in diameter at its thickest part, was found in a rather firm, adhesive mass, which adhered to and surrounded the posterior and external aspect of the cæcum. There was no pus in the appendix, but the condition shown by an incision into it indicated that pus would soon have been present. (The specimen was placed in alcohol, therefore it does not show to be as large as when removed.)

The incision was closed without provision for drainage; patient made an uneventful recovery. In three or four months he was able to do any kind of farm work, which he has continued to do up to the present.

D., female, aged 12 years, has never been in extra good health. Father died at the age of 30 years from an attack of colic, which he had been subject to for several years. The pain during these attacks was, according to the statements of the family, in the right side, and principally between the umbilicus

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and the crest of the ilium. Paternal grandfather died when somewhat over 40 years old in a similar attack, after suffering at intervals for several years, with severe pains located on the right side.

When this patient was 9 years old she was seized with violent pain in the right side, about the cæcum, which required purgatives, hot stupes and morphia to relieve. Every few months the attacks recurred with increasing severity. During the autumn of 1897 the child was brought to my office. I found no induration and only a trifle of tenderness over the appendix, She had passed through one of her usual attacks about two weeks before. As these attacks had continued with some degree of regularity for three years I advised an operation.

The mother insisted that I give her medicine and, if possible, avoid an operation. I prescribed quinine, iron and strychnia three times a day. For more than four months her health improved and the tenderness disappeared altogether. This happy state of affairs was not destined to last; almost without warning another attack more severe than any she had ever had was ushered in. The usual remedies were given by the family physician, and at the expiration of three days it was thought she was better.

On Sunday after the beginning of the attack on Thursday night, the pain returned with great severity.

Two physicians were called in who, after examination, thought it probable that perforation had taken place. At this examination the child was free from pain and almost in a state of collapse.

The day following she expectorated some blood, but appeared stronger. The appetite returned and in a few days she was about the house and improving rapidly. A week later, although she had continued to improve, the family decided to have her operated upon. I found an appendix about two inches long, bent in the middle, the two parts bound tightly together, the free end larger than any other part lying against the point of attachment.

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The specimen shows very clearly the condition. There was no pus, the wound was closed and healed by first intention.

This case, to my mind, is one due to heredity. The father and grandfather having died after being afflicted with recurring attacks of colic, which, according to the statements of the family, were undoubtedly cases of appendicitis; the appendix bent upon itself in a way that could only have come from congenital malposition are my reasons for this conclusion. If you examine this specimen closely you will notice that the two opposing surfaces show no exudation, but were bound together by adhesive bands originating on the opposite sides of the organ. This would not be if the bending had taken place after the adhesive process had begun.

DISCUSSION.

Dr. H. K. LEAKE: I would like to know the method of treating the stump.

DR. BLAILOCK: In the first case the stump was removed with a Paquelin cautery, and as no pus was present and the wound believed to be aseptic, the incision was closed without provision for drainage.

In the second case, the appendix was tied with a 12-day cat-gut, cut off near the ligature, covered with peritoneum, the wound closed as in the other case, without provision for drainage.

DR. B. E. HADRA: A discussion on appendicitis may appear stale and antiquated, still even after having had an unusually large experience with it, surgically and medically, I confess that I do not feel perfectly at home yet, and that there are some points I would like to be better informed about.

The first point I would like to hear about is the perfect absence of pain, even on pressure, in obliously severe acute cases. This symptom seems to me to be a very ominous one, and at the same time, it is misleading as to the diagnosis; such cases die under the name of typhoid fever, etc. In the cases I met, the post-mortem examination showed a perfect necrosis, not only of the appendix, but also of the neighboring intestine. The consequential paralysis explains to me the absence of pain, which seems to be caused by the pulling of the adherent appendix by the peristalsis of the bowel.

If this is true, pains of severity may be taken as proof of adhesions, whilst mild pains will rather speak in favor of a free appendix under ordinary circumstances.

Next I would like to call your attention to a tenderness over Mc-

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Burney's point on pressure in a great number of people suffering from chronic indigestion, etc., and even in apparently healthy persons. I can assure you that at least one-fifth of all patients of the hospital under my care showed this symptom, irrespective of their complaint. I am, therefore, of the opinion that a mild chronic form of appendicitis is very common, and I believe that the intrusion of fecal matter into the narrow canal, which ought to be free of it, constitutes the most frequent cause of irritation and inflammation.

As to third point, statistics show that appendicitis is more frequent in the male than in the female. I am not willing, though, to accept such statement, without some restriction. I only concede it as to the serious, or to the gangrenous and perforating type. This is due to the better blood supply of the appendix in the female, where a little peritoneal fold containing an artery crosses over from the broad ligament to the peritoneal covering of the appendix. But to make up for this, there are a great many simple chronic forms, mostly viewed as ovarian or pelvic troubles. I know of a great number of cases which had been operated on for ovarian diseases, by others and by myself, and which were not relieved at all. In some of them a second operation on the appendix led to a cure, proving that it was this organ causing the suffering.

Since I know better, I never fail to examine closely McBurney's point, and I am struck to find this to be very often the most painful location. It is always easy to map out this region to be the limited seat of pain, whilst there are occasionally cases where the pains extend into the pelvis, and where a complication with ovarian disease is most probable. It is of the greatest importance, therefore, never to forget this point in our examinations.

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DISLOCATIONS IN THE ANKLE AND TARSAL JOINTS.

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On examining a vertical antero-posterior section of the foot one sees a perfect arch; the posterior curve being formed by the os-calcis, the keystone by the astragalus and the anterior curve by the scaphoid, internal cuneiform and first metatarsal bone. Upon this keystone rests the whole weight of the lower extermity through the tibia and fibula, which inclosed the bone in a veritable box, open in front and behind but clasping and closing in the sides of the astragalus by their malleolar processes. Below the malleoli the lateral aspects of the astragalus are still further supported by processes of the lateral ligaments which also cross over to the lateral aspects of the os-calcis.

If one studies the foot after removal of the astragalus, it will be seen that the bone occupies a deep hollow, the floor of which slants downwards from behind, and is formed by the two articular facets of the os-calcis and in front of these the upper surface of the inferior calcaneo-scaphoid ligament. The anterior wall is formed by the posterior surface of the scaphoid and the lateral walls are filled in by the two malleoli and the strong lateral ligaments.

In front there is nothing but a thin portion of the capsule covered by the long extensors, while behind the same conditions hold. The bone is held in this space mainly by the strong interosseous calcaneo-astragaloid ligament which is inserted along an oblique line which separates the two articular facets, and also by the attachments of the lateral ligaments. It is through these ligaments, especially the interosseous, that the blood vessels supplying the astragalus course.

From these anatomical considerations it will be seen that in pure dislocations of the astragalus, the displacement occurs

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most easily forwards because the passage in that direction is more free; that dislocations backwards are not prevented by any strong capsular ligament and that pure lateral dislocations are impossible without one or other malleolus being broken at the same time.

The shape of the trochlear surface also has some effect on the displacements. This is broader in front than behind and thus backward displacements are rendered more difficult because the anterior part of the trochlear surface cannot pass through the malleoli without great force which either springs them apart or fractures one or other malleolus. The accurate manner in which the anterior part of the astragalus fits the malleolar arch can be seen during life; thus with the foot in full dorsal flexion lateral movements are impossible, but with the foot in full plantar flexion lateral movements to a slight degree are possible.

FRACTURES OF THE ASTRAGALUS.

This injury unaccompanied by fracture of the other tarsal bones and malleoli is rarely seen although we have much reason to believe that it occurs more commonly than it is diagnosed, the bone being so deeply placed that accurate examination is almost an impossibility. (Holmes' Syst. of Surgery, pp. 1051, 1052).

Oftenest the cause is a fall from a height, but crushes of the foot have been known to fracture the bone.

The body of the bone may be broken into a number of fragments, the neck of the bone may be fractured (Rondeau, Erichsen), a corner of the articular surface may be clipped off (Holmes' Syst., p. 1052), in fact the bone may be broken in every conceivable manner.

The mere fissured fractures of the astragalus are hard to diagnose; there is a little or no displacement, crepitus may be very hard to elicit and in the majority of cases we can only shrewdly guess at the character of the injury. On the other hand fractures through the neck of the bone are accompanied

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slight flattening of the arch of the foot, intense pain on attempt to walk and on pressure over the seat of fracture. In Erichsen's case the deformity was very slight, but the line of fracture could be distinctly felt as could also crepitus be elicited on flexing and extending the foot.

Occasionally the posterior portion of the bone may be separated from its connections and driven from under the malleolar arch, projecting behind between the tendon achillis and the bones. There may be a wound of the integument through which the fragment may be removed (Erichsen, p. 647), or the integument may be unbroken and the fragment excised owing to the impossibility of reduction.

Fractures of the bone may also accompany other severe injuries of the ankle joint. In Rondeau's case where the fracture passed obliquely through the neck both tibia and fibula were broken through above the interosseous ligament.

I have seen a case of compound outward dislocation of the ankle associated with a fracture of the astragalus. The history is briefly the following:

A coal miner owing to a fall of coal from the roof of a mine had his foot imbedded immovably when another fall hit him on the back and knocked off his left leg. When I saw the patient I found the ankle forcibly dislocated outwards and a great wound present on the inner side through which the upper surface of a broken astragalus presented. The internal malleolus was broken off and was attached by its ligaments to the side of the os-calcis, while the tendons of the tibialis posticus and flexor longus pollicis hung out of the wound in loops.

The circulation of the foot was good, and although the wound was full of coal I decided to attempt to save the foot. The fractured portion of the astragalus was removed, also the internal malleolus (presented) and the torn out tendons of the tibialis posticus and flexor longus pollicis. The result was excellent, and in spite of the loss of the bone and muscles my patient six months after was able to drive a cart and walk from four to six miles daily with little inconvenience.

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The line of fracture in the astragalus runs from just in front of the trochlear surface at the base of the neck backwards and downwards to the groove which exists between the anterior and posterior articular facet. The removed portion of bone includes the whole trochlear surface and the posterior articular facet. The head and neck of the bone were left behind.

Treatment (1) in simple cases without displacement consists in absolutely immobilizing the parts preferably in plaster-of-paris and then for at least four weeks preventing the patient from using the limb.

(2) In simple fractures with displacement an attempt should be made to reduce the fragment and failing this it would be better practice to excise it.

(3) In compound fractures the broken fragments had better be removed. Although cleanliness will prevent suppuration and pyæmia, which so often followed these injuries in olden times, the ankle joint will be as good and in many cases much better than can be got by allowing a comminuted astragalus to remain behind.

DISLOCATIONS OF THE ASTRAGALUS.

Probably the best classification is that given by C. Nelaton (Traite de Chirugie Duplay et Reclus, Vol. III, p. 249) into

I. *Dislocations of the Astragalus Proper.*—Where the astragalus loses its connections with both the tibio-fibular arch and the os-calcis.

II. *Subastragaloid Dislocations.*—In which the astragalus maintains its connections with the tibio-fibular arch, but loses those uniting it with the rest of the bones of the foot.

I. *Dislocations of the Astralagus Proper.*—These are called by French writers "Double dislocations of the astragalus," but when complete they might be more fitly spoken of as quadruple dislocations, because the astragalus loses its connections with four bones (Holmes' Syst. of Surgery, Vol. I. p. 1100). These are best divided into the following varieties:

1. Where the astragalus loses all connection with the tibio-

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fibular arch and the other bones of the tarsus (B. Anger, "Enucleation"). The direction of the displacement may be forwards, backwards, inwards or outwards.

2. Where the astragalus rests under the tibio-fibular arch or has been slightly displaced from this space, and has been rotated on its antero-posterior axis so that the upper articular surface looks inwards or outwards.

3. The astragalus rotates so that the antero-posterior axis transverse.

4. Where the body of the astragalus is separated from the head by a fracture through the neck, and the bone has so rotated round its transverse axis that the upper articular surface looks either backwards or forwards.

Total Dislocations (enucleations). (a) *Forwards.*

According to most authorities these are most frequently met with; and foremost stand the luxations directly forwards, then those forward and outward (Turner Trans. Provinc. Med. and Surg. Ass'n, Vol. IX, p. 417). The forward and inward are less numerous than the lateral or backward.

The forward displacements result when the violence is received with the foot in full plantar flexion, when the tibia bears on the posterior part of the astragalus and forces it from its socket on to the dorsum of the foot. Some of these dislocations have been partial and some complete, and most of them were simple.

The symptoms of this injury are usually clearly marked. In the partial dislocations the head and neck of the bone can be clearly felt in front of tibia and fibula, and over the displaced bone the skin is somewhat tightly stretched. The tibia and fibula bear almost the same relations to the os-calcis as normally. In total dislocations the bone may lie on the dorsum of the foot, on the cuboid or external cuneiform, or directly in front on the scaphoid, or may even lie on the outer side of the cuboid.

If the case be seen early the astragalus can be entirely palpated on the dorsum of the foot. The tibia and fibula sink down on to the upper surface of the os-calcis bringing the two malleoli nearer the sole of the foot. The foot may be inverted

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or everted according as the forward dislocation is associated with an outward or inward displacement.

(*b*) *Dislocation Backwards.*

This is a much rarer accident. It usually occurs when the injury is received by the foot in full dorsal flexion. The direction of displacement may be directly backwards, backwards and outwards, or backwards and inwards.

The dislocation may be either partial or complete. The symtoms are the following: If complete the malleolar arch rests on the os-calcis and the distance between the sole of the foot and the malleoli is shortened. In front there is a depression where the head of the astragalus normally exists. Behind on either side of the "tendo achillis" or in front of it a bulging exists which represents the displaced bone. The skin over the bone is usually tightly stretched and may even be torn. The movements of the foot are difficult but there is usually no inversion nor eversion.

(*c*) *Lateral Dislocations.*

These dislocations are usually compound and complete.

In Turner's tables (loc. cit., Holmes, p. 1102) in five inward dislocations all were complete and compound, two were associated with fracture of tibia and fibula and one with fracture of astragalus. In six cases of outward dislocation, four were complete and compound; one complete and compound and associated with fracture of the scaphoid; one was complete and simple.

Fracture of one or other malleoli usually accompanies this variety, but Boyer (Maladies Chirugicales, Tome 4, p. 311) reports a case where both tibia and fibula were intact. Malgaigne reports a case where the astragalus was forced through the wound and falling on the ground was picked up by a bystander.

ROTATION OF ASTRAGALUS ON ITS ANTERO-PORSERIOR AXIS.

1. *Where the Upper Articular Surface Looks Directly Inwards.*

The whole foot is dislocated outwards. On the inner side the

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internal malleolus forms a prominence under which the upper articular surface of astragalus projects; the astragalus can in the early stages be easily palpated. On the outer side the extended malleolus lies in a deep groove formed between the fibula and the os-calcis.

The tibialis posticus tendon is often stretched over the displaced astragalus.

2. *Where the Upper Articular Surface Looks Directly Outwards.*

Nelaton (Duplay et Reclus, loc cit, p. 255) mentions two degrees (a) where the astragalus still remains under the tibio-fibular arch, its upper articular surface lying in contact with the articular surface of external malleolus, and (b) where the astragalus has left the tibio-fibular arch and is present below the external malleolus. In both the articular surface looks directly inwards, but in the latter the foot is forcibly adducted and the plantar surface looks inwards.

3. *Where the Astragalus is Rotated Around its Transverse Axis to the Right or to the Left.*

The rotation usually measures a quarter of a circle, the head of the bone resting against either internal or external malleolus; but Thierry (Duplay, loc cit) mentions a case where the head of the bone lay between the tendo achillis and the internal malleolus.

4. *Where the Astragalus is Separated from its Head by a Fracture Through the Neck.*

The body of the bone then twists round its transverse axis in such a way that its upper articular surface looks either forwards or backwards. The Musee Dupuytren possesses one such specimen figured by Nelaton (Duplay, loc cit) where the articular surface looks directly forwards.

McCormac (Path. Soc. Trans., Vol. 26) also describes such a case.

The Treatment of Dislocations of the Astragalus.—In discussing this subject it is best to divide it into (1) cases not associated with a wound of the soft parts (closed dislocations), and (2)

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cases associated with a wound of the soft parts (open dislocations.)

Open Dislocations.—(a). Where the dislocation is complete no doubt should exist as to the necessity of complete and speedy removal, as the bone would in all probability die if it were possible to replace it in its original position. In Norris' case (Provinc. Med. Jour., Sept. 2, 1843) the bone was found lying on the ground by the side of the patient.

(b) Where the dislocation is partial much may be left to the individual choice of the surgeon. If the parts are clean and reduction can be accomplished easily the bone may be replaced. Desault reports a case where he reduced the bone after division of the resisting bands with a bistoury, where recovery ensued after some months of suppuration and extruding of fragments of dead bone (Œnures Chirugicales, p. 435.) If the bone is rotated on its axis in such a manner as to tear through the attachments it had better be removed, as the risk of necrosis is always great, and an excellent foot will result even after ablation of the bone. Pick (London Lancet, Vol. 1, 1892, p. 689) reports a case of open dislocation of an astragalus associated with version on its vertical axis so that the facet for the internal malleolus was directed forwards and the head of the bone outwards. The bone was attached to the rest of the foot by only a small part of the external lateral ligament and a band of tissue on the inner side of the bone. These were divided and the bone removed successfully, the patient being ultimately discharged with a sound limb.

Closed Dislocations.—(a) When complete it is doubtful whether any attempt should be made to reduce the bone. Nelaton (Pathologie Chirugicale, Vol. II, p. 485) advised extirpation as opposed to any attempt at reduction because the bone had probably torn through its vascular supplies and would necrose. This probably is only partially correct. Erichson (Vol. I, p. 718) says that dislocations backwards uncomplicated with fractures of the malleoli have never to his knowledge been reduced.

The best practice is probably the following: Flex the leg on

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the thigh to relax the calf muscles, and have an assistant to use counter-extension on the limb near the knee while the operator manipulates the foot. In forward dislocations where the toe is in plantar flexion, flex still more and pull on the foot and heel in such a way as to increase the space between the os-calcis and the tibio-fibular arch, while at the same time an attempt is made to push the astragalus back into its place. In backward dislocations with the foot in dorsal flexion, flex dorsally still more and manipulate as before.

In outward dislocations with the foot inverted, invert still more and manipulate as before. In inward dislocations, invert the foot and extend and counter-extend as above.

Where all attempts at reduction by these manipulations fail the tendo achillis or the tibialis posticus and anticus may be divided. Failing by these means nothing remains but removal, for it is not advisable to allow the astragalus to remain in its abnormal position, because sloughing of the skin and subcutaneous tissues will occur in a large proportion of cases, and in the remainder the foot will be of little use to the individual. (Sir. A. Cooper and M. Broca, Gay. des Hop, 1852, p. 371, advised leaving the bone in the early stages and then removed it or amputated, as the case demanded.)

(b) Where the dislocation is *partial*, we ought always to attempt reduction. Even here the obstacles to reduction are sometimes very great. Usually the main difficulty is due to spasm of the calf muscles which is easily overcome by manipulation or by an anæsthetic. Occasionally reduction is impossible and has been ascribed to various causes. Dupuytren said that in forward dislocations the sharp posterior end of the astragalus became jammed in the groove between the two articular facets on the upper surface of the os-calcis. The tendon of the tibialis posticus has been known to slip over the head of the astragalus (in inward and forward dislocations) and come to lie on the outer side of the neck. Desault (loc. cit.) attributed it to the narrowness of the opening in the capsule which entangled the head in a noose.

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What is to be done under these circumstances? Perhaps tenotomy might relieve the condition immediately and it should be attempted. Failing in this, are we to leave the bone alone or must we cut down and liberate it by a carefully carried out open dissection? Every case must be judged on its own merits. If seen early most cases undoubtedly ought to be reduced even if an open operation be necessary, for with proper cleanliness it is very unlikely that evil results would follow. Failure in reduction would certainly mean lameness to some degree, and this would certainly be a reproach to the present standing of our surgical art.

SUBASTRAGALOID DISLOCATION OF THE FOOT.

In these the astragalus remains firmly fixed in the tibio-fibular arch while the rest of the foot parts company with it. They are described as occurring in the following directions:

1. Backwards;
2. Laterally;
3. Forwards;

the order above given being in point of frequency. The direction is usually, however, seldom directly forwards or backwards, a lateral deviation being usually associated with it.

Backward Dislocations.—Here the head of the astragalus rests upon the scaphoid or cuneiform bones and stretches tightly the skin of the instep. The foot is usually extended (plantar flexion) and slightly adducted.

Immediately underneath the head of the astragalus the scaphoid can be felt, behind the tubercle of which a space is found. The heel is elongated and the tendo achillis forms a marked projection in front of which the upper surface of the os-calcis can often be felt. The distance from the tip of internal malleolus to the point of the heel is increased; from the internal malleolus to the end of the great toe decreased.

The oblique dislocations only differ from the above description in the position of the foot as regards eversion and inver-

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sion. In oblique backward and outward dislocation the foot is everted; in backward and inward the foot is inverted.

The cause of these dislocations is usually a fall from a height with the foot in a condition of plantar flexion. The case of Mr. Carmichael (Holmes, loc. cit., p. 1096) occurred with the foot pointed to receive the weight of the body as his horse fell under him. The result was a typical posterior subastragaloid dislocation.

LATERAL DISLOCATIONS.

These may be either inwards or outwards. The outward dislocations are the most common. They are usually incomplete, and not *infrequently compound* (Broca). They are usually produced by forcible twists of the foot.

OUTWARD DISLOCATION.

The symptoms of this condition are the following: the foot is abducted and everted, the inner border looking downwards. The outer malleolus is buried deeply in a hollow and is in close contact with upper surface of the os-calcis. The internal malleolus and head of astragalus are unduly prominent and nearer to the sole of the foot than normal. Fairly frequently the head of the astragalus penetrates through the skin. Thus Broca (Memoires de la Society de Chir., 1853, p. 566), found nine out of thirteen compound, and in six the fibula was broken.

Two specimens in the "Musee Dupuytren" show peculiar features of this form. In one (piece de Nelaton, No. 762), the head of the astragalus has passed inwards between the tibialis posticus and anticus. In the other (piece de Petit, No. 761), the head of the astragalus lies behind the tibialis posticus tendon, being caught between it and a tight band of the internal lateral ligament.

INWARD DISLOCATION.

The symptoms here are: the foot is inverted, the inner edge looks upwards and the sole of the foot inwards. The internal

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malleolus is buried in a deep hollow; the external malleolus is very prominent, as is also the head of the astragalus. The inner border of the foot is concave and shortened, the outer border is lengthened and more convex.

DISLOCATION FORWARDS.

This form is very rare. Two cases only seem to be on record; one recorded by Malgaigne and the other by Broca. In Malgaigne's classical case the accident occurred to a quarryman who was thrown suddenly forward by a mass of stone falling on him. At the time of the accident the thigh, knee and ankle were flexed. The symptoms seen were: the foot was flexed on the leg, the projection of the heel had disappeared. The bones of the leg and astragalus rested on the posterior extremity of the os-calcis. The diagnosis was not made at the time, and nine months later the following condition was seen:

The foot was flexed (dorsal) on the leg, pointed inwards, and the internal border was a little depressed. The foot appeared elongated in front, while behind the prominence of the heel had almost completely disappeared.

The external malleolus was almost in contact with the tendo-achillis. A prominence corresponding with the head of astragalus could be felt in front of internal malleolus, and in front of this a depression in which the finger could be placed, showed the interval between the astragalus and scaphoid.

The *diagnosis* of these affections is often very difficult. Most commonly it will be mistaken for *dislocations at the ankle joint*, and if swelling exists it may defy all our efforts to come to a proper conclusion. Then again, *fractures of the tibia* just above the ankle may give rise to some difficulty, although in the absence of swelling proper attention to the bony points will lead to a correct opinion.

Fractures and dislocations of the astragalus proper must be considered, and perhaps they offer the greatest difficulty; but even here attention to the following points will enable us to distinguish them, viz.: shortening of the leg, due to approxima-

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tion of tibia and fibula to os-calcis; altered relation of internal and external malleolus to astragalus; and loss of motion in the ankle joint (Holmes, loc. cit.), which symptoms are invariably present in a dislocation of the astragalus.

I have lately had under observation an interesting case which at first view I was inclined to consider a rare case of forward subastragaloid dislocation. A man aged 20 was thrown out of a buggy and alighted in a tumble jumble fashion, injuring his right foot. He did not know how his foot was hurt, but thinks it was dragged against the wheel. Great swelling came on at once, and lasted for three months. For about three weeks pain was intense.

It is now three years since the accident, and one can observe the following points: The right (affected) foot is fully an inch shorter than the left. The prominence of the heel is much diminished; the distance between the tip of external malleolus and the posterior border of the tendo achillis is one and a half inches on the affected, two inches on the sound side. The outer border of the foot is markedly convex, with a marked prominence in the neighborhood of the calcaneo-cuboid joint. The head of the astragalus and scaphoid seem to be in contact. The inner border of the foot is slightly more concave than that of the sound side. The distance between the tip of the external malleolus and the sole of the foot is equal on both sides. The movements at the ankle joint are free, but there is great difficulty in obtaining movement at the mid-tarsal joint.

A skiagraph (presented) shows the features of the injury clearly. The astragalus and scaphoid have not parted company, nor has the scaphoid left any of its connections with the rest of the bones. The astragalus maintains its normal relations with the tibio-fibular arch.

The os-calcis seems to be pushed bodily forwards under the astragalus owing to rupture of the strong interosseous ligament and the anterior end is tilted outwards, having lost connection with the cuboid by fully one-half of its articulating surface. The injury is evidently a dislocation of the os-calcis forwards

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with rotation of the bone around its vertical axis so as to bring the anterior articular surface forwards and outwards.

I must confess that without the skiagraph I failed to interpret the condition accurately, and I think that carefully taken skigraphs will revolutionize our diagnosis of ankle joint injuries.

Treatment.—The treatment of subastragaloid dislocations has always been unsatisfactory. Some have been reduced with ease, but others have given the greatest difficulty. The causes of difficulty in reduction have been ascribed to many conditions, of which the following are probably the chief:

1. The posterior edge of the astragalus sometimes becomes wedged in between the two articular facets on the upper surface of the os-calcis (Nelaton.)

2. The head of the astragalus becomes wedged between the tibialis posticus and the inferior calcaneo-scaphoid ligament (Petit's case) or between the tibialis posticus and anticus tendons.

3. There may be such contractions of the calf muscles that there may be great difficulty in disengaging the os-calcis from the astragalus.

The treatment should then always carefully bear the probable causes in mind—always carefully relax the calf muscles by bending the knee on the thigh, and also preferably by general anæsthesia in addition. Failing in reduction by these means tenotomise the tendo achillis, and if necessary the tibialis posticus and even the anticus.

Failing in this it is perhaps better to let matters alone if the deformity is not great or if the dislocation is not open. But if the result is likely to end in a very deformed extremity with much lamenesss it would be better to remove the astragalus either at once or as a secondary operation. The foot without the astragalus is a very useful member and almost always better than a deformed foot with marked eversion or inversion; and it is as a rule much better to immediately remove the astragalus in cases of marked deformity where the integuments are considerably stretched, because sloughing of the skin and disor-

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ganization of the tarsal joints is very liable to occur. One is struck, on reading the older authors, with the frequency of suppuration and sloughing of tissues following these injuries; but nowadays all this can be either avoided or prevented.

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FRACTURES OF THE TARSAL BONES.

J. E. GILCREEST, M. D.,
GAINESVILLE, TEXAS.

This subject was allotted to me by our worthy chairman, and is one in which my experience is very limited.

These fractures do not occur frequently, as the shape and location of these bones are such that it is very difficult for them to be fractured without much damage to soft parts. But fractures of the astragalus are very possibly more common than has been suspected, as the diagnosis is not always easy, but sometimes impossible.

This bone may be fractured by jumping from a height, and alighting on the feet, or any similar direct violence. It may occur from indirect force, as by the foot being caught and pulled in machinery, or in the stirrup of a saddle when falling from a horse. It may be broken in any direction, and is sometimes split into several pieces.

If the violence causing the fracture has been great, the swelling will occur rapidly, making the diagnosis very troublesome. If there be luxation of either portion of bone, the deformity will call attention to it, when crepitus will probably be detected.

If the bone retain its place there will be tenderness across it, and crepitus may be perceptible if the swelling is not too great.

Standing or walking on the injured foot is very painful. The ecchymosis and swelling usually rapidly follow this fracture.

The calcaneum may be fractured by muscular action or by falling from a height, alighting on the heel; by crushing, or any direct violence. The powerful muscular action of the tendo achillis and other muscles of the calf of the leg, which are attached to it, have alone caused fracture, and they certainly aid any force in producing fracture and displacing fragments of bone.

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Portions of it may be drawn up two or three inches by muscular contraction and is at times hard to replace and retain in position.

There is no limit to the amount of damage that may be done by crushing forces, such as occur in railroad injuries, falling from a great height or heavy bodies falling on the foot.

About seven years ago I treated a fireman, who had caught his foot between the bumpers of two freight cars. He was passing between them and put one foot on the bumpers just as the train moved. The jar caused his foot to slip between the bumpers.

The ankle and heel were badly crused; the os-calcis was fractured near the center from behind forwards, and several small pieces of bone were broken off the outer side and were removed at the first dressing. The damage to the soft parts was very great; the necroses and sloughing extensive, taking several monthst o heal; but the recovery was complete, and the man now has a useful foot.

Fractures of the scaphoid cuboid, internal, middle and external cuneiform bones only occur from great violence, causing severe crushing of the foot.

Dr. Packard, in his article on fractures, written for the International Encyclopedia of Surgery, says he has never seen a fracture of these bones occur, except when the whole ankle was smashed, making amputation the only resource.

In 1891 I was called to see a man aged 48, who had sustained a severe injury of the foot by a heavy horse stepping on it. The internal cuneiform bone was fractured on the dorsal surface from near the center to the articulation with the scaphoid.

It had no treatment the first three weeks, and when I first examined this patient I found the wound had become badly infected. The entire foot and leg were swollen up to the knee. He had received no care, not even ordinary cleanliness. The foot and ankle were a mass of pus cavities and sinuses. His tongue was badly coated, his pulse 130, temperature 104. He was unable to eat or sleep.

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I first opened all pus cavities, irrigated thoroughly with bichloride solution, put in several drainage tubes, packed with iodoform gauze, dressed it daily till the swelling and suppuration was reduced sufficiently to operate. After etherizing the patient, I opened the old wound and found fracture as above mentioned.

The broken piece showed complete loss of vitality and was removed. The necrosis was extensive in the internal and middle cuneiform bones, also in the scaphoid. I removed all necrotic tissue possible and scraped away with a Volkmann's sharp spoon all dead bone; cleaned, packed with iodoform gauze and put on a liberal antiseptic dressing, which was changed for some time daily.

The wound healed slowly, taking about three months, but the recovery was complete.

Fractures of the tarsus require special care as the soft parts are usually badly damaged and easily infected.

I think the most important thing to do when called to an injury of this kind, is to thoroughly cleanse all wounds and put the foot in as aseptic condition as possible, then adjust all fragments and put the foot in the best portion for their retention. Plaster-of-paris or some other fixed dressing should be used to immobilize the foot, if the laceration of the tissue will permit.

When the fragments of bone are separated and cannot be retained in position by dressing, they should be wired or nailed together.

In case of fracture of the posterior portion of the calcaneum and the fragments being drawn high up by the tendo achillis, I think a subcutaneous tenotomy would be advisable if it could not be reduced without.

Fractures of the calcaneum and astragalus often fail to unite, and sometimes result seriously, therefore we should always be careful to have the adjustment and fixation as perfect as possible and guard the portals of infection with an ever watchful eye.

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REPORT OF A CASE OF GUNSHOT WOUND OF THE ABDOMEN NECESSITATING RESECTION OF FOURTEEN INCHES OF THE GUT, FOLLOWED BY RECOVERY.

A. C. SCOTT, M. D.,

TEMPLE, TEXAS.

Mr. I. A. L., age 45 years, a lumber merchant, on February 19, 1898, was walking with a loaded shotgun, holding it near the muzzle with his left hand. By some means he tripped and fell and the hammers caught on the handle of cistern and discharged one barrel loaded with No. 2. shot. The charge entered the right side of the abdomen near the umbilicus, and part of it emerged at the junction of the right hypogastric and lumbar regions without entering the abdomen. The remainder, about half the charge, entered the abdomen and made exit in the lumbar region, but lodged in the areolar tissue.

I saw the patient about an hour and a half after the accident, and immediately began hasty but extensive preparations for operation.

I will not attempt to give the details of preparation, but will briefly state that thermal sterelization was chiefly depended upon, and the abdomen was shaven and scrubbed as carefully as for more deliberate laparotomies.

With the assistance of Drs. Barton, Dennis and Lee I began the operation about four hours after the accident. Made an incision from the point of entrance near the umbilicus outward and backward to the lumbar region. The patient was very corpulent and an enormous amount of disintegrated fat and muscular tissue was exposed and removed before the cavity was opened. The incision through the muscular tissue and peritoneum was made transverse to the one mentioned, and parallel with the rectus, near its border, about six inches in length. Owing to great tension, the intestines rolled out quickly, and it

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was readily seen that many perforations had taken place. All the intestine that could be readily withdrawn from the abdomen was quickly wrapped in warm steril towels. A systematic search for perforations was now begun as the intestines were rinsed with steril water and returned to the abdomen. The first perforation, beginning from below, was found about two feet from the illio-cæcal valve. It and others, about seven in number, were closed with the Lambert continuous suture.

Some six or eight feet from the valve a portion of the gut and its mesentery were so extensively damaged that any attempt at closing the perforations would have been preposterous. The damage had been done chiefly to two small folds of the intestine about twelve or thirteen inches apart, but the blood supply in the mesentery attached to the intervening uninjured gut was so seriously damaged that two short resections of the gut was considered impractical and much more unfavorable to the patient's recovery. Hence it was decided to make one large resection and get through as quickly as possible.

The mesentery was tied off in small segments, the gut divided just beyond the damaged tissue, and anastamosis effected with a Murphy button. After the ends were adjusted, it appeared to me that the approximation was not secure, so I at once introduced a row of Lambert sutures entirely around the button.

As each fold of the gut was returned to the abdomen it was carefully rinsed with steril water poured from a pitcher, to clear it from all fæcal matter.

Before closing the abdomen, the cavity was flushed with steril salt solution.

The peritoneum and muscular wall only were closed with sutures. The remainder of the wound was rinsed with sublimate sol. 1–2000, and packed with loose sublimate gauze.

Considerable peritonitis followed, and the patient vomited almost incessantly during the first four or five days. Vomiting and peritonitis then gradually gave way. A large amount of sloughing took place in the skin and subcutaneous tissue, and at one time the open wound measured about six by ten

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inches. To this was added a separation of about three inches of the muscular wall, caused no doubt by excessive vomiting, and resulting in a prominent hernia with no covering but peritoneum. A small stitch abscess at the edge of the hernial protrusion caused some anxiety about the tenth to fifteenth days, but after evacuation it gave no further trouble. The hernial protrusion was counteracted by the use of pads made of sublimate gauze.

Enemas and saline purgatives were freely used after the second day. All sloughing ceased before the end of the third week. The button passed from the rectum on the twenty-first day. The external wound, though not yet entirely covered by skin, has healed without any trouble, and the patient is able to walk about and visit his neighbors as he pleases.

DISCUSSION.

DR. BLAILOCK: I have nothing special to add to the very brilliant case that has been presented to us, only to say that it is one of the grandest successes of modern surgery.

If there has been an operation done anywhere that more clearly demonstrates the great value of asepsis and modern technique in surgery than this case, I confess that I have not heard of it.

The doctor claims nothing original in this paper, but only claims to have followed faithfully the course of improved up-to-date surgery.

I wish to thank the doctor for the kindness he has done us in presenting his paper to the Association.

DR. J. T. JELKS: I want to congratulate the doctor on his success in this case and take this opportunity to refer to another button which is being used in intestinal surgery.

At the last session of the Pan-American Medical Association Dr. Jacob Frank, of Chicago, read a paper on intestinal surgery and exhibited a button of his device which will probably supplant the Murphy button and the decalcified bone plate of Dr. Senn. This button is made of decalcified bone and is composed of two pieces, the connecting spring being of rubber tubing made in two or more pieces and this does not injure its elastic qualities. When the decalified bone buttons have served their purposes in approximating the ends of the intestines, they are digested and only the rubber tubing or pieces of rubber tubing are left behind to be passed from the bowels.

DR. BACON SAUNDERS: I would like to say a few words about the

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excellent paper of Dr. Scott's and the splendid results he achieved. We should not have any hesitancy as to the result in these cases, provided the work is done right and in the right time.

I am confident from this case that if Dr. Scott had attempted to operate with the same dexterity and rapidity after the lapse of ten hours, that he attempted at four hours, the result would have been fatal; statistics are clear on this point. You expect your good results six to nine hours after the receipt of the injury; after twelve hours the results are fatal in each and every case.

This is a point which we should bear in mind, it should be taken home with us, put into our pipes and smoked and chewed with our cud, *that if we are going to operate, do it early.* This lesson is very clearly brought out in Dr. Scott's report.

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SECTION ON GYNECOLOGY.

CHAIRMAN'S ADDRESS.

A PLEA FOR MEDICAL GYNECOLOGY.

H. K. LEAKE, M. D.,

DALLAS, TEXAS.

In the surgical field of gynecology there are many workers. So fierce is the rivalry in this branch of our profession that both the exhaustive study and medical treatment of many of the diseases of women are much neglected. The spirit of the age in all departments of human endeavor "is to suddenly force one into the forefront of the struggling masses by the shortest possible route," even at the expense of retiring some things of scarcely less, if not of equal, importance, with those which, for the moment, hold a firm grasp on the minds of ambitious and restless spirits.

This trite observation applies as well to the practice of medicine which, notwithstanding some recent assertions to the contrary, appears to lag behind surgical investigation and achievement.

A thoughtful and quick conclusion from this is, so far as regards our own profession, that the operative surgical furor of today will, in the not distant future, be replaced or, at all events, counterbalanced by a more considerate, practical and exhaustive attention to the medical treatment of disease, no matter to what specialty this may have been arbitrarily assigned.

It appears that in the medical treatment of disease, while constant experience is a large and conceded factor in its successful managment, a profound knowledge of our formulated path-

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ology, no matter how defective at present, is a necessary qualification in the mental equipment of the general practitioner, without which he will not be able to convince his fellows of his superiority or even of his mediocrity.

Not so with the average surgeon of the times, who is to be seen and heard in every community, large or small. Even in our large cities there are surgeons of place and influence, who may be styled mechanical without that mental grasp of the pathology of disease so much to be desired, but who, it must be admitted, have attained a reasonable degree of success in the profession.

Now, if this be true with respect to the general practitioner and the general surgeon, a fortiori, it applies to the gynecologist, who has taken a partial and perhaps limited survey of the treatment of diseases of women, and the number of such practitioners, it must be acknowledged, is constantly on the increase. It seems that not alone the pathology, but the medical treatment of diseases of women has been much neglected and undue prominence given to surgical efforts, which alone appear to be those sought to be employed by the many local gynecologists throughout the country.

In the study of diseases of women there is much current pathology with less medical treatment recommended. Overshadowed, however, by the surgical spirit, which at present dominates gynecology, it is a question whether or not our present teaching is as logically and experimentally correct as it should be, to justify such frequent resort to the knife, and other means of local interference, as has become the common property of an active and ambitious profession. One has only to look within the numerous public and private hospitals devoted to the care and treatment of diseases of women, or to be conversant with his professional local surroundings to be convinced of the fact that woman, aside from her pelvic apparatus, has, to a deplorable extent, lost her claims upon our professional skill and anxiety.

Nor are the former wholly to be exonerated from the censure

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which should attach to unwise and perhaps hurtful treatment of a large class of sufferers who are admitted within their portals. Rivalry and competition between public institutions of this character have become notorious and proportionately dangerous items in the long list of evils that at present threaten the useful destiny of the profession. It is the common observation of those who frequently visit these institutions that many operations are performed which, for the comfort or safety of the victim had better have been left undone, the medical treatment of the patients being a mere cypher to which little or no attention had been paid.

The same feeling actuates the ambitious desires of hospital internes who leave the wards at the end of a few months' service and announce as gynecological specialists. Many of these have had scant training, not alone in the field of general surgery, but in the general practice of medicine also, which should round out the character of the well-equipped gynecologist. This is not the spirit nor the work of the great masters in the profession, who considered it worth their laborious efforts to unite the qualities of a good general practitioner to those of the pathologist and the anatomical surgeon, in as far as possible a just relation.

The medical treatment of diseases of women often achieves immediate and lasting results of the most beneficient kind. Skene has shown what may be accomplished by this means, and while it might be claimed by some that his recent work on medical gynecology is both plethoric and tautological, there yet remains in it a large fund of practical information suggestive of future useful additions.

The late William Goodell was an earnest advocate of medical gynecology. His lines, though draped in linguistic ornament and poetic sentiment, have rightly impressed the profession with their merits. He emphasizes the question: If systemic disturbance co-exist with evidences of pelvic disease what is the relationship, if any, between them? If the answer be doubtful shall we institute local interference which may superinduce

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greater risks to the present and future welfare of the patient? Consider for a moment the combination of a slight metritis with nervous perturbations, particularly in the unmarried or young female, which greatly react upon the mental and physical health of the sufferer. Shall we dilate, curette, or burn the uterus? Failing once to cure how often shall this be repeated?

I would not deny to some extraordinarily careful surgeons a finally successful local result in such a case. The claimants are many, one of recent date being Dr. Byford, of Chicago, who is said to be almost painfully exact in his local therapeutic measures. But how is it with the average gynecologist now installed in every hamlet? Prof. Byford says cure is possible only by the most rigid antiseptic measures. It is a chain, the dropping of one link of which may cost a life or consign to hopeless invalidism one enjoying a fair amount of health. Salpingitis, ovaritis, and pelvic peritonitis are lighted up and aggravated by the repeated interference.

In this connection I may ask what is the relation between sub-involution and general nervous disturbance? the former being held to be a very common condition which must be vigorously attacked by gynecologists. And this observation seems to apply equally to the cases where there are no local symptoms and to those with symptoms of hemorrhage and leucorrheal discharges. At all risks it appears that the size of the enlarged uterus must be reduced, but it has often been the question in my mind as to how much, if at all, the systemic nervous disturbance is dependent upon the hyper-plastic condition of the uterus. The rule is laid down that sub-involution is attended by such constitutional manifestations, but may I not be allowed to present the analogy between large fibroids of the uterus and sub-involution. The former are exceptionally attended by nervous disease, and are attacked only on account of hemorrhage, local change, or dangerous pressure symptoms.

In both married and single women backache is a common and troublesome symptom. It is often found associated with retrodisplacement of the uterus. Other nervous manifestations may

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co-exist. What is the relationship? If cause and effect invariably be assumed the remedy may proceed from curetting to ventral fixation, all of which may prove disastrous.

Some years since, Herman of London, published his statistical table of investigation on this point and proved that only exceptionally did retro-displacement cause the before-mentioned conditions: and Lawson Tait declared that the symptons were due, in every case, not to the displacement of the uterus, but to its inflammatory condition with probably disease of one or both appendages. In the dilemma it was Wylie, of New York, I believe, who advised medical treatment of this symptom, not only as a therapeutic but a diagnostic measure. I may add also that I have frequently, in men, known backache to be a prominent symptom both of rheumatism and of nervous spinal origin.

The association of ovarian and tubal with general nervous disease is one of commonplace observation. The nervous disturbance may assume the form of the so-called hystero-epilepsy, or even of insanity in its varied phases. The intimate relation of cause and effect between them is claimed to exist by many able practitioners.

Lawson Tait strongly believed that "Jack the Ripper" was a woman, the subject of menstrual mania, who might have been cured of her periodical insanity by removal of the appendages. Rohe undertook a series of investigations on this subject and tried to establish by operative measures the remote effects of ovarian disease upon the mental equilibrium of his patients.

It is assumed that beginning as an aura in the pelvis, the nervous disturbance is reflected through nerve tracts upon the sensorium, or arrested for a time at the solar plexus, the so-called abdominal brain of Robinson. Reinforced here it may thence be reflected upon the stomach, heart, spine, and various plexuses of the superficial nervous distribution. But clinical observation shows that the same conditions exist apart from pelvic disease of any character whatsoever. Whether or not any relation exists between them the operation may be indicated to remove one factor in the clinical make-up, but it must not be

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expected in every case wholly to cure the latter, and in those examples where no pelvic disease is discovered the operation can have none other than a disastrous effect upon the general condition of the patient.

We therefore realize the difficulties of diagnosticating such cases, an error in which, if it precipitates local treatment is followed by the most regretable consequences. Neurology is more or less an occult science: it is questionable how much the average gynecologist is able to interpret its phenomena. If studied in connection with pelvic disease we may well beware of biased or inconsiderate conclusions. It is claimed that neurasthenia has much to do with the nervous system and this is readily upset by disease of the generative organs, it is said, in both sexes, but the effects of lithæmia and other causes may in some cases exactly imitate those of the neurasthenic condition. There may be explosions of the nerve centres closely, if not exactly, resembling the different forms of genuine epilepsy. Rachford of Cincinnatti, and others claim that they possitively have established this relation. In a question of the circulation of toxines in the blood, probably of the zanthine class. Local treatment will often make matters decidedly worse, as I have known removal of the ovaries under these circumstances to accomplish nothing but harm to the patient.

Other familiar examples of combinations of pelvic with general disease might be mentioned, wherein, at least temporarily, the substitution of medical for surgical treatment may be both logically and practically demanded in the interest of the patient. Dr. Joseph Price has remarked that in his dispensary practice it is wonderful what beneficial results he secured from the use of the different preparations of iron in cases which has not been subjected to operation, and the success which had attended the close attention to the details of the Weir-Mitchell treatment has often been known to be little less than marvelous. The latter treatment loses nothing of its importance as a therapeutic resource in a large class of cases from its acknowledged failure in some patients who have finally been submitted to operative treatment

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with better advantage, for the reply may be made to this argument, recently brought against it by some, that many patients who have not been relieved by operation have afterwards been restored to health by the Weir-Mitchell treatment only.

The association of displacement of the kidney with cardiac, cerebral, and intestinal nervous disturbance is familiar. Has the relationship of cause and effect been determined to exist? If so, the operation of nephorraphy is placed upon a sound practical basis. It is well known fact, however, that in the majority of such cases the medical treatment is followed by substantial results. Of course, this assertion has reference emphatically to those examples where the displacement of the organ is not preceded nor followed by structural disease, which may, for this reason alone demand its removal. With the latter exception I have often been surprised to observe the rapidity and permanence of the cure of patients with displacement of the kidney, no operation whatever being performed.

The evil effects which so often follow a criminal assault made by operation upon the pelvic organs in the unmarried female for the treatment of certain forms of dysmenorrhea and slight endometritis are well known to those who have observed closely this practice in diseases of women. It is true, as will be pointed out later by a distinguished essayist, the difficulties in diagnosticating the different forms of dysmenorrhea and their combinations are indeed perplexing; but this fact does not justify the frequent interference by local treatment which is now so prevalent. As Howard Kelly denominates it, this species of rape is perhaps, oftener than otherwise followed by the most disastrous consequences. Medical treatment, which should include everything relating to the hygienic and constructive welfare of the body, if considered at all in such cases, is carried out in an unsystematic and half-hearted manner; but if the reverse; while failure may in many cases follow, a percentage of cures remains, justifying the practice of the conscientious practitioner who, under these circumstances, would deal alike with his own family and his female clientele.

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Many combinations of disease in the female might be cited wherein the true relationship has not been ascertained. In these, time and place may be sufficient to establish the fact that cure without operative measures may be effected readily by well directed medical treatment. It is probable that this test has as yet not been applied as exhaustively by the statistical method as that which relates to the surgical treatment of disease, the latter being influenced largely by the operative zeal of the times. But even with this check upon our conclusions there frequently lurks a dangerous fallacy in the attempted provings of any proposition by the statistical method. An eminent lawyer has characterized the latter as being the greatest of all lies. The statistical method has become almost the exclusive property of the surgeon. How different the conclusion reached if oftener applied to the results of carefully systematized medical treatment in gynecology. We must admire the conspicuous example of Emmet in his laborious and painstaking appeal to statistics as afforded by his own personal experience. Recent pathology and treatment may have invalidated many of his conclusions. It is not improbable, however, these may yet be confirmed, but if not, the method conscientiously employed will serve more firmly to establish the medical treatment in gynecology as a logical and useful procedure which will supplant much of the reckless and hurtful surgery now rampant in the profession.

It is not sufficient to claim, though supported by the statistical method, that such a case recovered from the operation,—a recovery is made possible by the perfected surgical technique of today. The question is, was the patient permanently cured or comparatively benefited to a striking degree? I would detract nothing from the achievements of our present surgery—its record is the glory, but also the weakness of our profession. It may be a confession of pathological ignorance it may not be able to save, or partly restore a diseased organ; it cannot replace that which has been destroyed. In these respects there may be a great future for medical therapeutics in gynecology.

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We are probably at the zenith of our surgical achievements in gynecology. Medical and surgical gynecology are now clamoring for a more substantial recognition. We have been fascinated with the possibilities of conservative gynecology, which have become realized. What shall we soon be doing for the medical treatment of the diseases of women?

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SOME IMPRESSIONS OF CANCER OF THE WOMB.

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MEMPHIS, TENN.

The treatment of cancer is so barren of permanent good results as to encourage us to hail with interest every contribution to its literature which offers anything of value, however slight it may be. There has been no attempt in this paper at a classical arrangement or orderly treatment of the subject. It is intended to be suggestive and in no sense exhaustive. It is not our purpose to classify malignant disease of the womb, nor even mention all the varieties, but only to call attention to the three locations in which it primarily appears, which gives a division of clinical importance rather than of scientific interest, viz.: first, the vaginal cervix; second, the cervical canal; and third, the body.

The vaginal cervix presents two varieties—the superficial, with its tendency to a formation of cauliflower excrescences, and the parenchymatous, with its nodular development and tendency to grow outward and upward. We do not desire to dispute whether that variety, beginning in the cervical canal, begins in the mucous membrane or wall of the neck. Neither do we desire to discuss whether the disease, which begins primarily in the body, begins in the glands of the mucous membrane or the mucous membrane proper, but rather to endeavor to impress the importance of an early recognition of its presence. The plea, irrespective of its location, is: *Find out its presence; discover its existence.*

The term malignant, as applied to cancer, means the tendency of the morbid process to involve contiguous tissue by direct extension, and to travel to tissues or organs not necessarily in close proximity to the primary lesion by lymphatic invasion.

The great bugbear to the dealing with cancer is delay in recognizing the disease. This delay is due to two causes. First,

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gross ignorance on the part of the patient, which makes her unappreciative of any of the early symptoms and the importance of the same attending the disease; and, second, the want of a full realization on the part of the physician of the great responsibility which he bears to his clientele.

There can be no doubt but the medical profession and the laity also are more alive to the necessities than formerly. But since all valuable movements come slowly, the ideal management is far in the future. If we can call attention to the subject in such a manner as to quicken interest, to excite the feeling of responsibility, and to impress one member present with the importance of an early investigation of his cases, and if we can so describe the gross appearance of the local condition as to cause even one case to be diagnosed earlier than it would have been, we feel that the labor spent in the preparation of this paper has not been in vain.

The general practitioner bears the greatest responsibility, because he is the first to be consulted in the great majority of cases, and because the diagnosis now, and only now, makes it possible to give permanent immunity. The symptoms, the gross pathology and certain differential points in diagnosis should constantly be borne in mind by the general practitioner in his daily family practice. He should realize fully that the best thing to do for a woman with cancer is to diagnose her case early. He should be ready to call to his aid the microscopist. He should not only appreciate this himself, but should acquaint his clientele with the frequency of cancer, the danger in delay, and the fact that the only hope is in an early dealing with this disease. Women should be taught that any unusual symptoms do not attend the menopause. They should be taught the innocent symptoms accompanying the cessation of this function, that the menopause means a cessation and not an increase of the flow. He should teach them that women at forty or fifty do not flow excessively without a morbid cause, any more than at younger ages. He should disabuse the minds of the laity that almost any and all symptoms may arise from the change of life, and

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that when a woman does not suspend this function as gently as a flower sheds its petals, it is because something is wrong—it is because there is some morbific agent at work within her organism preventing it. He should know and have them know that cancer is three times as frequent among women as men, and the morbid change occurs three times as frequently in the uterus as in the mammary glands. Alas! after he has done all this it will be found the symptoms are frequently not sufficient to cause the woman to seek advice, or even suspect anything wrong, until she is hopelessly diseased.

Most cases occur between forty and fifty-five years of age. It is rare before thirty, yet the writer has seen it several times before this age, and has, at this writing, a hopeless case on hand at the age of twenty-nine years. Bad hygiene and poor feeding are predisposing causes of this disease. The local causes are irritations about the cervix. In the writer's experience, it is very frequently engrafted upon a lacerated cervix. The most frequent location is in the vaginal portion of the cervix, next the cervical canal, and third, the body. The malignancy depends more upon the portion of the organ involved than upon any special histological character of the disease. When located in the cervical canal it is more malignant than in the vaginal portion; an invasion of the body is less malignant. The reason why disease in the cervical canal is most malignant is on account of its anatomical surroundings and lymphatic connections. When we consider the close proximity of the neck to the surrounding tissues, the bladder in front, the rectum behind, and the connective tissue on either side, we can understand why it is that cancer of the neck is more malignant than any other locations in the organ. When we dissect out a uterus and realize the thinness of the walls of the neck, with its intimate anatomical and lymphatic connections, we can understand why operations, however radical, unless performed extremely early, cannot be permanently successful. It is not because the disease is different in nature, nor because it is more virulent in character, but because of its anatomical proximity

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and lymphatic connections to the surrounding structure. It is for this same reason that cancer of the body is less malignant; it is on this account that operations of a radical nature give the greatest chances for permanent immunity. In other words, it more frequently happens, on account of anatomical and lymphatic connections, that disease of the body is confined to the organ, and has not spread to the surrounding tissues, consequently all the diseased structure can be gotten rid of by a radical operation. Therefore, operations for cancer of the body of the organ give greatest immunity. I should like to emphasize the fact that cancer continues when any portion of it is allowed to remain. I should like to emphasize that it is a continuation and not a recurrence of the disease that is our post-operative dread.

DIAGNOSIS.

I will merely allude to the use of the microscope and mention its value in the early diagnosis. Especially is it valuable in the diagnosis of cancer of the body of the uterus. There are quite a number of conditions which might for a time confuse the inexperienced physician, but in the majority of cases practitioners will be called upon to distinguish cancer of the cervix from only three diseases, viz.: cystic degeneration of the follicles, tuberculous ulceration, and syphilitic ulceration.

CYSTIC DEGENERATION OF THE FOLLICLES.

Follicular inflammation that has advanced to the point of cystic degeneration of the cervix may confuse for a time even the most experienced physician, but by means of puncture into the substance of the carvix, the cystic condition with discharge of the contents can very readily be discovered, which will reveal the true nature of the disease.

ULCERATIVE EPITHELIOMA.

The ulcerative epithelioma has well-defined, hard edges. The hardness extends beyond the ulcerating portion. The bottom

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of the ulcer is also hard and friable, so that the curette can readily be made to remove a large portion, the tenaculum or vulsellum will readily tear out. The bottom and sides of the ulcer are grayish in appearance.

ORDINARY EROSION.

The ordinary erosion is red in color, has no infiltration of the edges, and is smooth and velvety to the touch, the tissues surrounding are not ready to break down, and the tenaculum will not readily tear out.

TUBERCULOSIS.

Tubercular ulceration of the uterus is usually secondary to or coexisting with other lesions, as in the lungs, serous membranes, etc. It is frequently associated with fistula of the vagina, bladder and sinuses higher up. The uterus later on is in a condition of caseous infiltration accompanied by superficial mortification, the detached portions of which form the cheesy pus which fills the body of the uterus. However, the operative treatment, when the disease is unaccompanied by serious lesions in other organs, is the same as in cancer, viz.: total ablation.

SYPHILITIC ULCER.

The syphilitic ulcer of the cervix is rarely if ever the primary lesion; it will therefore be consecutive to the disease which has preceded it, with its attendant symptoms.

TREATMENT.

The treatment of cancer of the womb is necessarily surgical. In advanced cases nothing can be done beyond the alleviation of suffering and the removal of septic debris. In the early course of the disease the treatment should be radical, that is, all of the diseased structure should be gotten rid of. If it requires the total ablation of the organ, this should be resorted to.

A few years ago vaginal hysterectomy for cancer was more

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popular than it is today. The results of the operation have been so discouraging that many eminent operators declare that it has no place in the treatment of cancer. Others claim that the organ should be removed only in cancer of the body of the womb. When we consider that the disease attacks the womb primarily in only about two per cent of the cases, this position will practically repudiate the operation. The line of reasoning is this: If the disease has extended beyond the organ, the operation does no good, and the cicatricial repair incident to the use of the clamps will hasten the foreign growth rather than retard it in the region of the broad ligaments; if it has not extended beyond the organ, they argue there are other measures less radical which will be just as effectual—for instance, if the disease be confined to the cervix or even the cervical canal, a high amputation with charring of the tissues will give all the immunity that a total ablation would offer. If the disease be confined to the body, whether it began in the glands or mucous membranes proper, it is claimed that after a high amputation of the cervix, the diseased mucous membrane of the body together with a good deal of the uterine tissue can be removed, and the cavity thoroughly cauterized with escharotics or the actual cautery, and by this measure offer an immunity equal to the more radical operation.

But we do not propose to take up the time of the Association further upon this argument.

In conclusion, I desire to call attention to a method which I have been using in well-selected cases for the past few years. This method is by no means original. The preparation is made as if a total hysterectomy were to be performed. The speculum and retractors are placed in position, the cervix is grasped by means of the vulsellum forceps, the Pacquelin cautery knife is run around the cervix, cutting through the mucous membrane. The bladder and rectum are next separated from the cervical attachments just as though a vaginal hysterectomy were to be performed. Increased traction is now made upon the vulsellum, drawing down the cervix as low as possible, the cautery knife is

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next made to amputate the cervix at the highest possible point, leaving a conical opening, the body is now grasped by two or three bullet forceps, this is drawn down as far as possible, by means of the cautery knife the canal and a good deal of tissue in proximity to it is removed, then by the thermo-cautery the membrane near the fundus and the uterine tissue is very thoroughly cooked, so that if the disease has extended up the canal it is entirely destroyed.

This operation when done by the cautery at a cherry red heat, is bloodless. There is also very much less danger from metastasis following the cautery than the knife, from the fact that the veins, instead of being open, ready to take up the cancerous material, and transfer it to a remote part of the system, are seared over by the cautery, rendering this accident improbable if not impossible.

We have some cases operated on more than a year ago where the diagnosis was made by microscopical as well as macroscopical tests in such a way as to place the diagnosis beyond question, that are at this date enjoying good health and immunity from the disease so far as ordinary investigation can reveal.

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RESTORATION OF THE PERINEAL BODY BY AN OPERATION WITH SHIELDED NEEDLES.

A. C. SCOTT, M. D.,

TEMPLE, TEXAS.

The necessity for restoration of the perineal body has long been recognized and efforts in this direction, though frequently unsatisfactory, have done an incalculable amount of good for suffering women throughout the world.

Unfortunately the train of nervous symptoms for which this operation is being performed daily by our surgeons and gynecologists everywhere are frequently not all or only partially relieved. After due thought and careful study I am now prepared to take the position that as far as I have been able to learn *all operations heretofore done looking to the restoration of the perineal body to its normal dimensions and strength have fallen short of that object*, though it must be admitted that thousands of cases have been greatly benefited or completely relieved by the operations which have partially restored the perineum to its normal size. I shall now endeavor to make plain my reasons for this apparently radical view.

It may be said in a general way that all recognized operations provide for the approximation of the pared perineal surfaces by sutures.

I shall not undertake to discuss in detail the various methods, and they are legion, which have been employed, but will call to mind that, notwithstanding the numerous ways of paring the surfaces to be united, the stitches are always placed so that when they run into or through the triangular perineal body their general course is in one of three directions, viz: First, from the skin toward the rectum parallel with the vagina; Second, from the skin toward the vagina parallel with the rectum;

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Third, from the vagina toward the rectum, or vice versa parallel with the skin.

Many combinations have been devised, some of them very ingenious and in some respects quite rational, but *all are open to one objection* and that is, in short, *the contracting or puckering effect of all sutures placed in soft tissues.* The most perfect illustration of the mechanical effect of a suture is seen in the closure of a tobacco pouch or a purse by a string completely surrounding its mouth. It is apparent that the natural result of drawing the string is the approximation of everything held by it toward a central point, and the force is about equal from all points toward that center. If one were to try to bring into close contact the two sides of a pouch held thus, (See Fig 1.) by a string dawn round it thus: (See Fig. 2.)

The result would not be a flat contact of the two sides but in its stead each side would be puckered and folded upon itself as much as drawn to the opposite side and if each, before tying the string, measured an inch and a half the resulting body as outlined by the loop of the string would not likely exceed three fourths of an inch in its longest diameter. This is precisely what takes place when each suture approximating the lateral walls of a pared perineum is drawn and tied. A very noticable illustration of this is seen when an incision in the abdomen of a corpulent person is closed by deep sutures. Every one who has had any experience in abdominal operations has doubtless observed the gutter or linear depression marking the location of the incision immediately the surfaces are approximated by tying the sutures.

Fig. 3 represents a transverse section through the abdominal wall showing the two surfaces to be united with suture in place. (See Fig. 3.)

Fig. 4. represents transverse section of abdominal wall as it *should be* when tissues are approximated by tying the suture. (See Fig. 4.)

Fig. 5 represents tranverse section through the abdominal

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Fig. I.

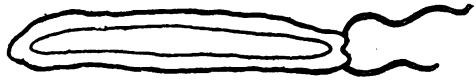

Fig. II.

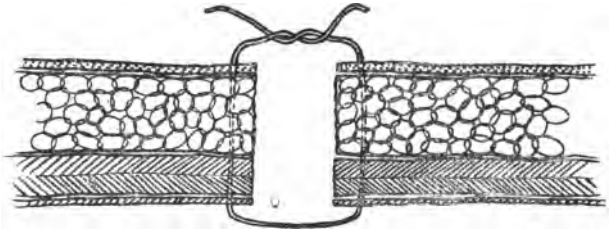

Fig. III.

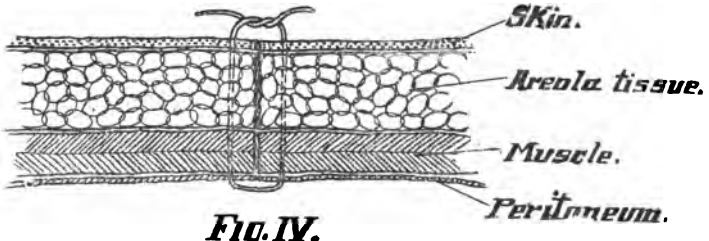

Fig. IV.

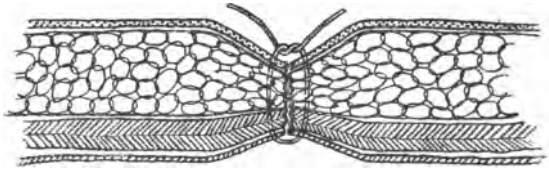

Fig. V.

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wall as it *really is* when tissues are approximated by tying the sutures. (See Fig. 5.)

It will be seen that the act of approximating the tissues with a suture and tying it draws the skin side inward and the peritoneal side outward and that the thickness of the wall at this point is reduced to perhaps one-half its normal proportions.

The shape and thickness of the restored perineal body depends upon the general course in which the sutures are placed.

Upon the basis of the natural mechanical effect of sutures upon soft tissues, I have endeavored in the accompanying drawings to truthfully illustrate the effect upon the repaired perineal body when sutures are placed in different directions.

I have selected for the purpose Emmett's operation for complete rupture in which the sutures run from the skin parallel with the vagina and rectum converging at the vesico-rectal wall. Also Simon Hegar's operation, in which the sutures run in three directions from the vagina, skin and rectum toward the center, but main sutures parallel with the skin. I have also endeavored to illustrate the effect of sutures when placed, first, running from skin towards rectum parallel with vagina, figs. 4 and 5, second, running from skin toward vagina parallel with the rectum, figs. 6 and 7.

As all other operations involve the introduction of sutures in some one of these manners modified, it is unnecessary for me to discuss them in detail.

It is reasonable to presume that a suture running parallel with and close to the rectum from the skin to the vagina will, when drawn with sufficient force to approximate the side walls of the pared surface draw the vagina toward the skin fully half an inch and the skin inward toward the vagina equally as much. The same applies to each suture in proportion to its depth and the extent of surface to be approximated, I think it will be seen by this course of reasoning that *it is impossible to restore the perineal body to its normal dimensions, and therefore to the full performance of its functions by the unaided use of sutures.*

In a case operated on by me while residing in Gainesville,

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Texas, in 1890, I observed to my astonishment while removing the wire sutures, some of which had been very deeply introduced, the loops were less than half the size I expected them to be, and upon careful examination, with one finger in the rectum and another in the vagina, I found that the approximated surfaces were well united, but the perineal body not more than half its normal thickness. I then began to appreciate the natural mechanical effects of sutures upon soft tissues, and after a great deal of study for several years I devised a method of placing the tissues to be united in flat contact without the use of sutures except for the purpose of approximating the skin and membranes forming the walls of the perineal body. This method which I have thought proper to call the "Shielded Needle Operation," is arranged for and executed as follows: Five pairs of straight steel, nickel plated needles, in length 1¼, 1½, 1¾, 2, and 2¼ inches respectively are specially prepared with lance points, three or four screw threads ⅛ of an inch from the point with large, round, strong eyes. Each needle point is provided with a nickel plated shield rounded at closed end and flat on two sides. This is provided with screw threads to correspond with those near the needle point. When ready for operation each needle is threaded with a strand of coarse silk about eight inches long. The two ends are brought together and knotted to prevent the thread from slipping out.

These are thoroughly sterilized by boiling in soda solution and laid in a tray separate from other instruments and ligatures. A strong needle holder made with a longitudinal groove in one jaw of sufficient size to receive the needle is sterilized and placed with the needles.

Proper provision having been made to render the operation aseptic the surfaces may be pared by the Simons method, or in cases of complete rupture by Emmett's method. Tait's flap splitting may be used, but I am not sure but that its disadvantages outweigh its advantages. In case of complete laceration the next step in the operation should be to suture the rectal wall with silk or catgut. If the former is chosen, uninterrupted su-

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tures tied in the rectum would be preferable. If the latter, a continuous buried suture will be sufficient. With a small sharp pointed bistourie a tiny puncture is made in the skin at each point where needles are to be inserted. This procedure not only facilitates the introduction of the needles, but by preventing tension immediately around each needle diminishes pain during the after treatment.

The first pair of needles should be selected according to size of the patient and the extent of the tear. In case the patient is very large or the tear extends very far up the recto-vaginal septum the largest size should be chosen; otherwise the next size is long enough. One or two fingers of the left hand are now introduced into the rectum; the needle selected is grasped with the needle holder, and after the point is entered through the lowest opening in the skin on one side near the anus it is dipped downward and outward far enough to catch the free ends of the sphincter, then plunged straight through the tissues parallel with the rectum until the point emerges in the vagina near the central portion of the pared surface and near the margin of the vaginal membrane. Before it is turned loose the hand of the operator is depressed downward and outward in a manner that brings the point of the needle forward in the direction of the vulval orifice where it is caught by the assistant, who immediately places the shield upon it. The needle is now turned loose, and its mate is introduced in like manner upon the opposite side. A continuous suture of the mucous membrane is now begun at the central and highest portion of the pared surface, and made to include the margins which will be posterior to the needles when the tissues by them are approximated. A strong piece of silk is now thrown around the vaginal end of each needle just behind the shield and is tied by the assistant, the operator at the same time with finger and thumb of his free hand approximates the outer ends of the needles and by this means is enabled to judge and regulate the tension being made. Next, the outer ends are fastened together by tying the silk threads which have previously been placed in the eyes of the needles.

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The next pair of needles in length is introduced in like manner one-third or half inch above the pair just described, and before they are approximated the continuous suture in the vaginal membrane is brought up to correspond with the level of the needles about to be approximated. A third or fourth pair of needles, as indicated by the size of the surface to be united, is introduced above those just mentioned and the continuous sutures, after approximating the edges of the vaginal mucous membrane out to the vulval commissure, is applied to the margins of the skin either down to the anus or as far as the laceration in the skin extends. When the skin has not been lacerated the continuous suture stops at the vulval commissure. The parts are now cleaned and dried, all punctures in the skin are well coated with iodoformized collodion, the patient's urine drawn, a sterilized gauze pad is applied and held in place with a triangular bandage. The patient is now ready for bed.

The after treatment consists of catherization during the first three days, antiseptic douches, liquid diet, saline cathartics and enemas. The needles are allowed to remain in place eight or nine days when they are removed in the following manner: The patient is placed in the dorsal position with the hips elevated and the knees well reflexed upon the abdomen. The operator introduces the index finger of the left hand into the vagina and locates the shields of the uppermost pair of needles; along this finger as a guide, he passes a probe pointed scissors or a suture cutter which has a point like a crochet needle which cuts the loop of silk which is holding the vaginal ends of the needles. Retaining his finger in the vagina as a guide and for the purpose of steadying the loosened needles he passes along his finger a slender forcep, provided with a catch, and grasps the shield of one of the needles which has been freed. The silk holding the outer ends of this pair is cut and the needle whose shield has been grasped by the vaginal forceps is taken in the grasp of the needle holder and given a few quick backward turns. In this manner the shield is removed from its point and both needle and shield are quickly withdrawn. Its mate is

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withdrawn in like manner, the operator then proceeds to cut the silk loop holding the vaginal ends of the next pair of needles and removes them in like manner. This is done until all of the needles have been removed. The patient is given an antiseptic douche and required to remain in bed two or three days longer, when she is allowed to sit up as much as she feels disposed.

I herewith append a brief report of nine cases operated upon by this method and am pleased to state that, while my first operation was attended with much difficulty, and afterwards faulty needles and undeveloped technique made two others seem likely to be failures, every one of them resulted in a good, strong, perineal body, closely resembling that of the nuliparous woman.

DISCUSSION.

DR. W. T. BROWN: I would like to say that Dr. Scott's method of operating with the needles meets with my approval In my experience I have found it very hard to restore this perineal body and make it firm and hard as it should be. In a case that I operated on seven weeks ago, I found some contraction in central portion, evidently from the fact that the sutures did not exert an influence on every part equally around center. While lateral pressure and perfect adaptation of parts are essential, which we may possibly get by the use of the needles properly adjusted.

If operations with these needles are a success, and I do not see why it should not be, we will get such a firm, good perineal body as has not been had before. I am glad that the doctor has met with such success, and when I operate on another case, involving this body, I will try this operation and his needles.

DR. J. T. JELKS: There is an old saying "that great men's minds run in the same channel," and while the doctor is unquestionaly original in his work, it is also true that he has been doing and advocating the same thing that was years ago done and taught by Dr. H. C. Marcey, of Boston, Mass.

I want to say that I do not think the whole trouble is with the perineal body. This perineal body, I take it, is of small importance in the woman's make up. It simply serves as the point of attachment for some small muscles and fascia. The trouble is not with the perineal body, but the muscles and fascia. If this position is true, I take

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it, that this is the trend of medical thought. We no longer attempt to restore it as by Emmett's old operation; this operation being a thing of the past and one that modern gynecologists do not practice. Instead of building up this so-called perineal body, we endeavor to restore to their proper position the tissues that have been torn, pelvic fascia and muscles, and principally the levator-ani muscle and fascia. We note that this pelvic fascia is composed of inelastic white fibrous tissue, which will not distend or stretch as the child's head descends through the pelvic outlet; this being true, it must tear, and hence separation from the perineal body, so-called, takes place. In many cases the tear, instead of involving the perineal body, so-called, goes to the left or the right side of the body and extends up the vaginal canal for one or two inches; in these cases nearly always involving the levator ani. As a result of these tears we have the "puckering string" destroyed, and as a result of this, we have a contraction of the fascia muscles, all the muscles involved, and hence, instead of a closed canal, we have a patulous orifice. In operative work in this class of injuries you readily understand that what we have to do is to restore damaged tissues to their normal relation. This cannot be done by building up the perineal body, neither, in my hands, has Tait's operation by the flap-splitting method, accomplished the desired result. With the sutures introduced as above indicated, the posterior vaginal walls will be lifted up to the anterior walls. The anus will be brought forward to its normal position and the parts will be as they were prior to labor.

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ON DISPLACEMENTS OF THE OVARIES.

THOS. MORE MADDEN, M. D., F. R. C. S. E.

M. A. O. Honoris Causa, Royal University, Ireland; Obstetric Physician and Gynecologist, Mater Miscricadiae Hospital, Dublin, Etc.

Displacements of the ovaries, apart from those caused by ovarian disease, until comparatively recently were almost completely neglected by gynecologists. From clinical experience I have long been convinced that ovarian hernia are of common occurrence and greater importance than is commonly supposed.

In everyday practice a certain proportion of our gynecological patients complain, among their other troubles, of some degree of dull sickening pain, the situation of which is referable to the inguinal region. If further investigation be instituted in such cases we may, in not a few instances, be able trace this pain to ovarian displacements, which, however, is too often passed over without recognition, owing to the greater prominence of other symtoms.

Ovarian hernia may be found in the inguinal region, and may be either direct or oblique. In the former the tumor appears in the groin above Poupart's ligament; in the latter it follows the course of the canal downward and forward, and makes its way into the labium. Occasionally the displacement is observed in the femoral region, immediately below Poupart's ligament, and to the inner side of the femoral vessels. Still more frequently the ovary is displaced downward into Douglas' space, and this prolapse may, for all practical purposes, be considered as an ovarian hernia. In these cases generally the left ovary, as from its anatomical position might be anticipated, is that prolapsed in the recto-vaginal fossa, where, on examination it may be discovered as a small, oblong, elastic and highly sensitive tumor, bulging into the post-cerviacal vaginal cul-de-sac.

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Although in some instances congenital, these hernia most commonly occur in patients whose abdominal parietes have been relaxed and viscera compressed by repeated gestation.

They may also be induced by similar immediate causes as other hernia, such as the violent muscular efforts of the second stage of labor, lifting a heavy child, straining at stool, etc.

But in the most frequent of all forms of ovarian displacement —namely, that downward into Douglas' space—the causes of the protension are most usually gynecological, as, for instance, the vis a tengo of abdominal or uterine tumors, or the direct tension on the uterine appendages occasioned by displacement of the uterus.

Symptoms.—Ovarian hernia manifests itself by the sudden occurrance of a small ovoid tumefaction possessing certain distinctive characteristics, and making its appearance in either the inguinal or femoral regions, or in the labia, or directly downward in Douglas' space. This tumefaction, as observed, in its ordinary condition, is about the size of a large walnut, and when inguinal is very slightly sensitive.

Before the menstrual period the extended ovary becomes enlarged,—in one case recently under my care it increased to the size of a small orange,—and then gives rise to a dull aching pain, which gradually subsides, so that shortly after the termination of the menstrual epoch the displaced organ resumes its previous condition, and generally ceases to give any active trouble until its functional activity is again stimulated by the approach of the next catamenial period. In some instances, however, these symptoms do not thus disappear in the interspace, the dull sickening pain remaining permanently, and the congestial hypertrophy of the displaced organ continuing to increase until relieved by suitable treatment.

Diagnosis.—That the differentiation of ovarian displacements was formerly very imperfect is, I think, evident from the scant notice of such cases by the older gynecologists, by whom their existence was either ignored or confounded, when external, with enlarged inguinal or femoral glands, or, when labial, with other

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tumors in that situation; whilst ovarian protension into Douglas' space was apparently in many instances taken for pelvic abscess, subperitoneal pedunculated fibromata, hæmatocele, or the displaced fundus uteri. We at least have now no excuse for similar errors in the diagnosis of ovarian hernia.

These, whether inguinal or femoral, may be readily distinguished from enterocele by the entire absence of the characteristic smoothness and globular form, gurgling on compression, and resonance on percussion of the latter; whilst from epiplocele they may be differentiated by contrasting the firm, clearly-defined, ovoid tumor observable, if it be ovarian, with the soft, doughy feeling and irregular, ill-defined outline of the hernia, if omental.

From enlarged inguinal or femoral glands an ovarian tumefaction may be recognized by the smaller size and multiple character of the former; whilst from any pelvic or other abscess the distinction is obviously rendered possible by the history of the case, as well as by the presence or absence of fluctuation.

Lastly, ovarian prolapsus into Douglas' space is distinguished from a posterior uterine displacement or fibromyoma by recto-vaginal examination and the use of the sound.

From the tumefactions in the posterior vaginal cul-de-sac that may be occasioned by cellulitis rectocele, tubal gestation, pæ-ovarian or broad ligament cysts or abscesses, or pedunculated subperitoneal fibromyomata, ovarian prolapsus may also be differentiated by the methods of examination just alluded to.

If the uterus and its attachments be thus found normal in size and position, if there be no fluctuation discoverable, and if at the same time in the posterior cul-de-sac we discover a small, well-defined, firm, ovoid tumor, enlarging regularly at each menstrual period, and which at slight pressure gives rise to a peculiar sickening, dull pain, we need have little hesitation in concluding that we have to deal with a case of prolapsed ovary.

Treatment.—The treatment of ovarian displacements is necessarily dependent on the situation of the extended organ in each case; or, in other words, whether it be found at either of the

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abdominal rings, or in the labium, or in the recto-vaginal interspace. In the first of these, whether the ovarian hernia be above or beneath Poupart's ligament, an effort should, in the first instance, be made at its reduction by taxis. In the majority of cases, however, such hernia are irreducible when seen by the gynæcologist, and even in those few instances in which reduction is possible, the retentive pressure of a truss is neither endurable nor effectual. In most cases of this kind we must, therefore, be content to protect the ovary, if protended externally, from further extension or injury, by a well-fitting, hollow truss.

But before this an attempt should be made to lessen the local hyperæsthesia of the generally hypertrophied displaced gland by sedative applications, and, if necessary, by leeching, etc., whilst the constitutional irritation, almost always present in such cases, should be allayed by suitable constitutional treatment.

When, however, these measures prove ineffectual in relieving the almost constant, worrying, acting pain which at each monthly period in these cases becomes accentuated into acute suffering; when, too, the patient's health is endangered by the constitutional irritation occasioned by this apparently trivial and too often neglected diplacement, we should then fall back on the extirpation of the dislocated and probably diseased gland as the only resource available under the circumstances.

In my own practice I have more than once been thus obliged to resort to this procedure. In one case the ovarian hernia occupied the right labium, the patient being an unmarried woman about forty years of age, who, when admitted into hospital, was completely broken down by dull, dragging, pelvic pain, anorexia and nausea. She was greatly emaciated, despondent, and hysterical.

Menstruation was scanty and somewhat irregular, and physical examination failed to disclose any other local complaint than a tumor, almost as large as a hen's egg, within the right labium, any handling of which occasioned severe pain and nausea. This swelling she had noticed only a few months before admission

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into hospital. The patient having been etherized, my colleague, Dr. Kennedy, and myself, proceeded to remove the tumor, which was found to extend through the canal, to the walls of which it was firmly adherent in many places up to the abdominal ring, where it tapered off to a narrow pedicle' which was secured by double ligature and divided. In so doing several large vessels had to be ligatured, and free, venous oozing also took place, which was arrested by packing the cavity with iodoform gauze, and subsequently bringing the edges together with wire sutures and compression. That night she slept fairly; her temperature was 101° and pulse good. Next morning she had some retching, but was able to retain a little iced champagne and jelly; she was extremely weak; her temperature was only 99° and pulse 120; a few hours later, however, she suddenly became collapsed and died. We were not able to secure permission for a post-mortem examination, which we were anxious to obtain. The tumor removed, on careful examination, verified our diagnosis, proving to be a greatly hypertrophied and disintegrated ovary.

In the next case of ovarian hernia that came under my observation the issue was more fortunate. In this instance the displacement was situated in the left inguinal region, just above Poupart's ligament. The patient was a young lady who shortly after marriage commenced to suffer from dragging pelvic pain, irritability of stomach, loss of appetite, and consequent wasting and debility, further increased by menorrhagia.

She also now became extremely hysterical and despondent and for nearly two years before I saw her had been under almost continual gynecological treatment abroad and at home, during this time having, inter alia, worn almost every form of pessary for the relief of some supposed uterine displacement.

Ultimately a small ovarian hernia, which became very troublesome at each monthly period, was discovered in the left inguinal region, and being irreducible, after the failure of other treatment, its removal was proposed and agreed to. Accordingly I

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extirpated the dislocated ovary, after which she made a rapid and complete recovery.

Another case of the same kind, in a young unmarried woman, was afterwards under my care in St. Monica's ward; but the patient declined operation.

To these cases of true ovarian hernia I might, did time permit, add the history of many cases of prolapse of the ovary into Douglas' space which have come under clinical observation in the hospital within the last few years. In only one of these was oophorectomy found necessary, the other being sufficiently relieved by the replacement of the ovary followed by the application of a suitable support, viz: my "Roller Pessary."

I need hardly observe that not only are ovarian hernia requiring removal of the gland, as just said, very exceptional, but also that the performance of oophorectomy under such circumstances is by no means always devoid of risk. Hence in no instance should this step be resorted to without urgent necessity, and until a fair trial has been first made of other remedial and palliative measures.

In considering the treatment of prolapsus of the ovary, its causes must be carefully borne in view.

Thus, the extension may be due, as already pointed out, to the pressure from above of a uterine or ovarian tumor, or to the traction of a uterine displacement on the broad ligaments, and, obviously, these abnormalities must be removed or relieved before any successful reposition of the prolapsed ovary can be made.

When this condition is due to some accidental circumstance, or to a relaxed state of the parts occasioned by constitutional causes, we may, with greater probability of permanent success, attempt to return and retain in situ the displaced viscus.

For this purpose, the patient should be placed in the genu-pectoral position, when by firm but gentle, steady, bimanual pressure through the rectum and vagina, upward and forward, we may be able to lift the extended ovary out of the recto-vaginal fossa and to push it up into its normal position, where

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it may then be retained by the support of a well-fitting pessary, which in the majority of instances will be found effectual in preventing any further prolapse.

Finally, in cases where these measures fail, and where the local and constitutional effects of the ovarian prolapse are urgent, we may, as happened in some of my cases, possibly be obliged to resort to vaginal oophorectomy.

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A STUDY OF LACERATIONS OF PARTURITION, WITH SPECIAL REFERENCE TO RECOGNITION AND TIME OF REPAIR.

J. M. COBLE, M. D.,

DALLAS, TEXAS.

In October, 1895, I was called by a neighboring physician to see a patient who had been confined about two weeks previously.

On examination, I found her abdomen very much enlarged, especially in the region of the transverse colon, which was very much distended. Other symptoms combined with these conditions led me to suspect septic peritonitis.

I questioned doctor and nurse as to injuries; both stated there were none. On further examination I found both sphincters torn, with liquid feces coming from the rectum, while pus with a very offensive odor flowed freely from the wound.

Her condition was such as seemed to render further investigation impossible, but I determined to gain all the knowledge I could concerning the case, without injury.

I found deep lacerations on either side of the cervix, into which I could pass my finger through the pelvic cellular tissue as far as the peritoneum, with a cervix so rotten it would scarcely bear pressure between thumb and finger, much less tenaculum or forceps.

I thought these tears were the pathway by which the septic infection had travelled to produce the condition which existed.

Studying this case, I resolved to search for tears with more diligence and patience in the future, and not depend on anyone.

Immediately after the birth of the child, if the labia are separated, and the vaginal walls, including the cervix, are inspected under a good light, the ragged bleeding surfaces of the tears stand out in marked contrast with the smooth walls, although both are deeply congested.

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In the practice of many, the patients are rarely examined for tears, and if at all, the parts are only seen by bad light.

Disinfection is imperfectly carried out, and, if immediate repair of the perineum has been done, that is, the edges of the skin brought into apposition, but no attention whatever is paid to the mucous membrane, the various muscular structures of the more deeply situated and perhaps, most important, injuries of the case.

In my experience, I think it requires greater surgical skill and technique to do a primary repair than a secondary operation.

It is not the usual custom to make an inspection of the cervix and primary repair of its injury, although it has been taught and practiced by Dr. Price for some years.

If a deep cervical tear is not repaired, it is a cause of infection, a means of sub-involution, displacement and catarrhal inflammation of the uterus.

In the tears of parturition, unless one is in the habit of examining carefully, they can little realize their extent, and the possible dangers they afford. The region of the broad ligaments, the pelvic cellular tissue, are exposed to external infection in two direct ways:

First. By a tear in the roof of the vagina which runs parallel with the urethra and the full length of the vagina.

Second. By a deep tear of the cervix passing beyond the cervico-vaginal junction.

These tears are often bilateral, with one side a little greater than the other. If an inspection is not made in a proper manner, these tears are overlooked; and if they heal at all, by secondary intention, and become a source of great after trouble owing to adhesions tending to anchor the uterus immovable, and in an unnatural position, the organ is placed high, cannot be drawn to the outlet, but is firmly fixed to one side with a mass of hard scar tissue formed from the improper or neglected treatment of these tears.

Septicemia, which arises from these tears, should be distin-

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guished, and the fact recognized that the infection in the peritoneal space is direct and not by the way of or involving the uterus.

The perineal tears, usually extend upward through the vaginal membrane that lines the lateral sulci, are rarely medial, owing to the thickness of the membrane in this region; and if the tear is bilateral, the raphe is raised in the form of a thick flap with the base upward.

The tear along the lateral sulcus often reaches to a great depth, and is often caused by the head starting within the vagina, which is englarged by the shoulder following, plowing down between the levator fibers and their rectal attachments.

Neglect of this injury results at a later date in the serious disability of a relaxed vaginal outlet.

Tears which involve the bladder and urethra are very infrequent, and can be detected by the involuntary and constant flow of urine.

The skin tear of the perineum is generally straight, extending in severe cases from the hymenial ring to the mucous membrane of the rectum.

The rectal tears are rarely deep. Both sphincters are at times torn, and the levator ani is injured.

The tear into the rectum forms a serious complication, destroying the function of the sphincter muscles, and causing incontenance of feces and flatus.

Strange, however, as it may seem, if the operation is not performed at once the patient may carry her malady for years, and perhaps for life, without seeking the relief so readily afforded.

Often the spincters are partly torn from their sheath, and appear as a nipple-like projection, half an inch in diameter, and about an inch in length. There is a temptation to cut off the protrusion of muscle at the time of repair, but I think it should be restored intact.

From the experience I have had with these tears briefly described above, I believe it is wrong to attempt to repair lacera-

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tions when extensive, without the proper means at hand, as regards instruments, disinfection, etc., or to do the work in an incomplete manner by simply sewing the muscles and skin together so as to give a fair temporary appearance exteriorly, which is foul within. The question of time, being worn out, or nervous by long continued labor, is no excuse for indifferent treatment, as I know from experience that the parts can be satisfactorily treated within several days from the time of the accident.

The reason one should treat the case carefully from the beginning, and do a primary repair, is obvious, when we think of the great many conditions that later require operative treatment, often of a capital magnitude in these neglected cases, which can be prevented if properly treated at period of lying-in, which is equivalent at least to the period of repair, and is a period which in the life time of many women is the most opportune for the treatment of her trouble.

I believe the period of convalescence would be shortened by complete primary repair, and would prevent many of the pelvic troubles of women.

When the tear consists of more than a simple laceration, involving the sphincters, the contents should be expressed from the uterus, a drachm of ergot given, a pad of cotton or gauze wrung out of an antiseptic solution applied to the perineum, then the patient should be given time for rest; of course if it is a simple tear, a few stitches taken at the time is all that is necessary.

If the proper antiseptic precautions are taken, or if it so happens the patient is still under the anesthetic, and necessary arrangements have been previously made and competent assistants at hand, I should not defer operation.

The different circumstances peculiar to each case will determine the duration of time that the surgical repair should be delayed.

At least one hour should be given for rest, and by that time the full effect of the ergot will be realized, which may be of use

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in counteracting any tendency of the anesthetic to relax the uterus.

There is but little difference within the first ten hours, the retraction of the uterus is greater at the tenth hour than at the end of the first hour, but a little more care is requisite in refreshing the parts.

The repair of the cervix is easier at the end of ten hours. Strict antiseptic precautions should be taken in a most careful manner in preparing the preliminaries as well as the most perfect antiseptic plans for sterilizing the wound, the instruments, the hands of the assistants and operator.

A table with attachments for supporting the legs, covered with sterilized linen, should be placed in a good light for operating. A small table for instruments; trays should be placed near it, a Kelly pad with a pail, and an irrigator containing a sterilized solution, should be placed in their proper places.

For the repair of the tears I use kangaroo tendons and fine cat-gut suture and curved needle should be perfectly aseptic. Have everything necessary for the operation in readiness.

The anesthetized patient is placed on the table, the parts rendered thoroughly aseptic. The rectum is then dilated and carefully cleansed by an assistant, and the contents of the uterus removed. You can now examine satisfactorily the exact nature of the injuries. The hand of an assistant on the fundus presses down and readily exposes the tears in the cervix and their extent which are usually bilateral.

After scraping the raw surface with a sharp curette to insure union, they are closed with an over and over or an interrupted suture. The blood should be washed away carefully after each stitch. The suture is passed just below the mucous membrane, and not exposed in the canal, but on the outside of the cervix.

The tear in the neck of the bladder or urethra is next closed by the help of sound in the urethra and bladder, with great care that no part of the suture extends into the canal.

The loose membranous connective tissue can be gathered up

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with a line of sutures over the first layer to reinforce the wound from leakage.

In the vaginal tears carefully bring together the torn edges of the mucous membrane and muscles that correspond to each other, and unite them with sutures firmly and in close apposition so there are no pockets and the raw surfaces in contiguity.

Be careful to conceal the point of the needle from the entrance to exit, so as not to expose the stitch in any part of the laceration, by so doing you avoid pockets, if parts are properly brought in opposition with no puckering and applied at proper distance.

Remember, if the repair is not immediate, the raw surfaces should be scraped clean with the edge of a scalpel or sharp curette.

The rectum is now closed in a similar manner, the suture passing only through the muscular coat of the gut. Be careful not to have any opening that would admit a leakage of the contents of the bowel into the perineal wound.

Remember, in these tears always to pass the first stitch at the internal angle of the wound, further, that each tear requires a separate suture, that is, do not connect the lacerations, so if infection occur in the region of one, it will not necessarily be transmitted to that of another. The deeper layers of the torn levator group of muscles, and the transverse perineal are carefully brought into apposition, and the internal, later the external sphincters are repaired by simple suturing.

The greatest care should be exercised to bring the torn edges back to their normal position, as the value of the perineum depends on the perfect condition of these muscles.

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UNILATERAL SALPINGO OOPHORECTOMY AND APPENDICECTOMY WITH REMOVAL OF FOUR CALCULI FROM THE TRANSVERSE MESO-COLON.

B. F. KINGSLEY, M. D.,

SAN ANTONIO, TEXAS.

Mrs. K. German, age 33, multipara. First seen by me November 6, 1896; she had had a normal confinement two months previously followed in about ten days with pain in the lower abdomen, especially in the right side, for which she was compelled to remain in bed most of the time; she had frequent paroxysms of sharp pain extending into right scapular region and shoulder. While there was marked tenderness on pressure in the region of and a little below the gall bladder, as well as over the appendix and ovary. In order to get any ease she had to lie in bed with her right leg flexed on the abdomen; any change from this position causing excessive pain. Digital examination of the womb revealed great tenderness in the right broad ligament with marked tension and immobility of the tissues and womb, on the right side; and a temperature of 100° F. An operation was advised and done on November 12. The right tube and ovary were considerably enlarged and inflamed, the broad ligament thickened, and adhesions everywhere. These were released, the tube and ovary removed, the appendix found behind the cæcum and very adherent. It was dissected out and found to contain no mesentary of usual length, but greatly enlarged and inflamed. It was removed and the peritonium closed over the stump. In exploring the upper abdomen for an explanation for the scapular pains,—thinking I might, perhaps, find some gall stones,—to my surprise I found some hard and sharp nodules which were turned out, and proved to be four calculi imbedded in the transverse meso-colon; they were dissected out and the

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wounds closed by Lembert sutures, each wound sponged dry and the abdomen closed; her recovery was rapid and she left the hospital on the sixteenth day, and has been perfectly well since. Nursing was suspended for a few days until all danger from peritonitis was over, when it was resumed. The breast being relieved in the meantime by the pump.

The case is interesting chiefly from two standpoints: 1. The etiology, which is involved in uncertainty; whether the inflammation originated in the appendix, or tube, and ovary, there being little doubt about its infectious character; and 2. The peculiar location and formation of the calculi. The only instance of the kind I have seen in many abdominal operations.

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SECTION ON OPHTHALMOLOGY AND OTOLOGY.

REPORT OF CHAIRMAN.

R. F. MILLER, M. D.,

SHERMAN, TEXAS.

In the beginning of this the thirtieth prosperous year of the Texas State Medical Association the Ophthalmological and Otological Section heartily joins in the general felicitations. Though some of the distinguished oculists of our State who have preceded me as chairman have, with cause, complained of scant courtesy in the conduct of our Section we are proud to say that we are still an integral part of this Association. With the promise of an interesting list of papers today and the hope that we may never be cut off from the deliberation of the whole body by being sent to a separate hall to consider the subjects in our special line, it is with a feeling of great satisfaction that I acknowledge the courtesy extended to me. My predecessors in this place have seen fit at all previous meetings to review the general progress in our lines of work during the preceding year. This custom has now become obsolete in the American Medical Association and following along their line and in this day of much magazine reading, I shall trust that our surgeons have read the discussions and passed judgment upon the merits and demerits of cataract extraction in high myopia, of eucaine as a safe substitute for cocaine, of the use and abuse of the much exploited X-ray, the increase in the frequency of advancements instead of tenotomies, the tendency towards the adoption of Mules operation of evisceration and artificial vitreous, antitoxine in diphtheritic conjunctivitis and the various other methods discussed in magazines the world over. In dis-

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eases of the ear the many ingenious instruments perfected for the relief of the distressing tinnitus aurium by vibratory treatment of the tympanic membrane have convinced few of their efficacy other than their respective promoters. A distinguished member of our faculty in Texas has lately called attention to the efficacy of Politzer inflation in acute suppurative otitis. I can heartily endorse his commends, as it is and was almost a routine with me in such cases. Our own aurists have paid too little attention to the demands for rational treatment in diseases of the ear and the study of the various aural troubles opens up a brilliant but sadly neglected field for study. Aurists are too much inclined to treat all ear cases in a perfunctory way and to leave them in the hands of the Lord.

But "revons aux moutons." We have a fine list of papers for this section today, the titles indicating the progressive tendency of our Texas faculty (notably the papers of Drs. Mullen and Daviss). So your chairman has decided to leave the subject of Ophthalmology and Otology, which is well covered by his conferees, and to take up a subject which is properly included in our Section. I shall call your attention to some nasal conditions which I hope to make of interest both to the general and special surgeon. The subject of nasal obstruction has been of great interest to me and its long train of reflexes call for the greatest care on the part of the rhinologist. There is no more frequent cause for this obstruction than spurs and crests of the septum. Patients come, or are sent to the rhinologist, with a history of constant colds, headaches, hawking of mucous from the throat, a tendency to stoppage of the nostril and great inclination to sneeze. Examination shows one or more projections from the septum into the nostrils. These are of various extents, from a small pointed body to a ridge more than an inch in length. This condition, whether of traumatic or inflammatory origin, calls for relief. Whenever there is a train of symptoms referable to these causes and we can accomplish relief we have a most grateful and well rewarding list of patients. Of course septal spurs may exist without marked symptoms,

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but there is so little danger attendant upon the operation that the removal of such obstructions is even then usually advantageous, as we rid the patient of an impending trouble. The least cold tending to bring the spur in contact with the turbinates and then troublesome symptoms follow. The operation is not an especially severe one, being done under cocaine. A cotton plug soaked in an eight per cent solution of cocaine is forced into the nostril anæsthetising as well as dilating the field. The cocaine plug should be left in situ for twenty minutes at least. Having instruments sterilized and at hand, the patient's head is left to an assistant. The cotton plug being removed, an incision is made through the mucous membrane to the bony base of the spur. The membrane is then drawn away from the projection of bone above and below. With a nasal saw, preferably Bosworth's, the bone is quickly sawn through and removed. When the sawing is not smoothly done a curette is used to remove any spiculæ of bone. Hemorrhages often quite copious. As soon as the field of operation can be examined the mucous membrane is replaced above the area and pressed as smoothly as possible. After treatment consists in slight friction over the wounded surface, a destruction of any granulations, with cleansing to aid the healing process. The surface is usually smooth in a few weeks, a proper treatment of the membrane leaving little if any scar. Relief is often great and immediate.

There is little after discomfort, the patient is happy. The greatest amount of dissatisfaction on the part of both surgeon and patient is in those cases where the operation is imperfectly done. In confirmation of these statements, and hoping the Association is not superstitious, I shall report a series of thirteen cases operated during the past few months.

No. 1.—D. H., male, white, farmer, aged 34, robust, more than six feet high. Sent by Dr. Mathews, of Howe. Complains of colds during the past fifteen years, thinks he has not been free from cold for more than two-years, nose often stopped, especially at night, many headaches and much sneezing when in

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dusty atmosphere. Examination showed a rounded, pointed spur projecting two-fifths of an inch into the left nostril, and in contact with middle turbinate. Under cocaine, spur removed with Bosworth saw. Hemorrhage slight. This being a beautiful specimen with a perfectly rounded base, the operation left a very smooth surface and there was no curette used. Patient felt relieved and healing was perfect. This was six months ago and during that time patient has not had one cold and remains perfectly well. He paid me a good fee and has sent me several friends.

No. 2.—Miss T., white, aged 18, Midland, Texas, daughter of a stockman. Came with a history of constant colds, headaches and pains radiating over the face from the right side of the nose. A large septal spur was found occluding the nostril. Removed under cocaine with saw and curette. Hemorrhage profuse, pain slight. Healing not perfect, there being small cicatrix. Relief immediate and constant since three months.

No. 3.—E. H., Brenham, Texas. White, aged ten. Kicked by a mule some months previous. Large septal ecchondrosis, no bony base. Breathing interfered with, headaches, snoring at night. Removed under cocaine with a Brown's ecchondrotone. Result, symptoms relieved and no return.

No. 4.—Miss K., Sherman, Texas, aged 24, white, teacher. Constant colds, many headaches and naso-facial pains. Examination showed a crest more than an inch long on the right side of the septum. Removed under cocaine with the saw and curette. Healing not perfect but fair. Result, relief of symptoms.

No. 5.—Dr. M., Van Alstyne, white, aged 24. History of repeated colds, nasal occlusion and headaches. Crest of the right side of septum, with contact between the turbinate and crest for about one-half inch. Removed with saw under cocaine. Relief quick and permanent.

No. 6.—E. S., white, aged 20, Columbia, college student. Symptoms, nasal obstruction and headache. Large septal spur

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resulting from being hit by a base-ball. Removed under cocaine, relief permanent.

No. 7.—Mr. S., aged 28, white, druggist. Same symptoms, constant colds, large spur of left septum. Removed with saw and curette under cocaine. Healing not yet complete. Patient says he "feels like a fighting cock," though he was desperate before the operation.

No. 8.—S. E., male, white, singer, Hillsboro. Came on account of an increasing nasal twang to his voice with a tendency to cold. Examination showed a moderate sceptal spur. Removed under cocaine with saw. Relief permanent.

Nos. 9, 10.—C. S. and B. F., both college students and each having an ecchondrosis of the triangular cartilage. Seeking treatment more for cosmetic effect than for interference. Both removed under cocaine with good results as to appearance and respiration.

Nos. 11, 12 and 13.—All three males with symptons of nasal occlusion, headaches, colds, hawking and naso-facial pains. No. 13 being asthmatic—each had a spur of moderate size on the left septum. Removed under cocaine with saw and curette. 11 and 12 had great relief. No. 13 continues to have asthmatic attacks and partial relief from colds. He however also had many polypi in each nostril which show a tendency to return. The above list of operated cases from the case book have been of great interest to me. Along with these I have some others under observation who so far due to various reasons have not consented to an operation. One being a sister of charity and unable to obtain consent from the superioress of the order. These cases, some of whom I have treated many months, have so far failed to show any decided improvement. I tell them plainly that unless the obstruction is removed there can be no permanent betterment. The responsibility then being theirs. I shall close this paper urging physicians to examine or have examined the nostrils of all patients who refer their troubles to the nose and throat. If they have these septal spurs or crests, remove them or have them removed. The whole trouble is sometimes referred by the

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patient to throat when the nose is at fault. A careful examination should extend from the nose through the pharnyx; for like the young doctor who, in making digital examination entered the wrong orifice, the patient may tell us to go a little higher.

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THE RELATION OF OUR SECTION TO THE STATE MEDICAL ASSOCIATION.

VARD H. HULEN, A. M., M. D.,

GALVESTON, TEXAS.

It is hoped that a short discussion of the relation the Section of Ophthalmology and Otology bears to this Association will not be unprofitable. My own observation, and conversations with older members of the Association on this subject, have given me the impression that this Section does not command the interest and attention that it deserves. Our Section appears to be a kind of "necessary evil." At Fort Worth, year before last, there were sixteen papers on the program for the Ophthalmic Section, and but four of them were read. At Paris, last year, there were fifteen papers on the program for our Section,—of these there were but three read before the Association. The other Sections fared much better. It may be that many of the papers prepared for the Section of Ophthalmology and Otology in the past have been truly uninteresting to the general practitioner; and as diseases of the eye, ear, nose and throat form but a small percentage of the practice of general practitioners, they are but little interested in them. It is also true, and unfortunate, that the proper diagnosis and treatment of diseases of the eye and ear require peculiar and special training and apparatus not usually found in the general practitioner's armamentarium. And the technical terms used in ophthalmology are as unfamiliar to many as the deaf and dumb alphabet. Nevertheless, there are a great many conditions of the eye, ear and throat of vital interest to *all* physicians, and a joint discussion of them by general practitioners and specialists should make our sessions enthusiastic ones, instead of causing "that tired feeling."

There are no legitimate reasons why this Section should be

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considered an ophthalmological society in which specialists only are interested. On the contrary, those contributing to this Section should choose subjects interesting to all members of the Association, with the expectation of having them favored by a general discussion. I confess that I have, myself, been guilty of preparing papers for this Section—fortunately they were not read—as uninteresting to general practitioners as if they had been dissertations upon the habits of the *Icthyosaurus communis.*

The relation of this Section to the Association is identically the same as that of ophthalmology, otology and laryngeology to general medicine. Every one should thoroughly understand that oculists, as we are commonly called, are practitioners of medicine. People who knew me as a general practitioner have asked since *why I quit practicing medicine.* And some physicians seem to think that oculists are not as amenable to the code of ethics as themselves.

In no way can diseases of the eye, ear, nose and throat be separated from general medicine, for the great majority of diseases that specialists are called upon to treat starts from or depends upon constitutional troubles.

Diseases of the nervous system, cardiac diseases, diseases of the kidneys, infectious diseases, syphilis, rheumatism, influenza, and tuberculosis very commonly produce significant eye symtoms, and vitally important eye diseases. We are not infrequently able to diagnosticate a constitutional disease by an examination of the eyes, and our attention may first be called to the disease by the condition of the eyes, especially may this be so in brain, heart, and kidney diseases.

To illustrate these facts I shall refer briefly to two or three cases.

Case 1.—Mr. J. R., age 27, German, complained that for about two months he had been suffering from headaches and had some trouble with his sight, he wished to have his eyes examined on this account. The patient was so nervous and complained so much of his headache that the ophthalmoscopic exam-

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ination was not completed before he fell to the floor in a convulsion, he regained consciousness but soon other convulsions followed and death resulted in about five hours after the first one. An autopsy showed that death was due to advanced nephritis. The patient was *apparently* in good health, but an ophthalmoscopic examination would undoubtedly have revealed his true condition months before.

Case 2.—Mr. P. G., age 48, Irishman, married; I was called to see this patient by his family physician. He had been confined to his bed for six weeks by a severe attack of rheumatism. Two weeks before my first visit the left eye became inflamed, his physician suggested that they call in an oculist to see his eye but the eye symptoms being so much less severe than his general suffering the patient declined. The usefulness of this eye was hopelessly destroyed by plastic iritis before I saw him, which condition could have been entirely prevented, no doubt, by the right treatment applied early. If the attending physician had ever been present when this section had discussed the subject of rheumatic iritis he would have forced the attention of an oculist on this patient and thus saved a useful eye.

Case 3.—A young man came to the office saying that he had recently gone into business for himself and had strained his eyes by overwork at his desk; he was apparently in good health. An ophthalmoscopic examination showed a typical picture of syphilitic retinitis. Although he denied all knowledge of specific disease, antisyphilitic treatment resulted in a good recovery. Without the ophthalmoscope I doubt if a correct diagnosis could have been made in this case.

Many similar cases might be recited but these are sufficient for the purpose.

No general practitioner can afford to neglect to make or have made opthalmoscopic examinations of the eyes of many of their patients, as the most important aid to a diagnosis or prognosis may be thus obtained.

As regards the ear it is a fact that a very great many of the cases of incurable deafness have accompanied or followed con-

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stitutional diseases which could have been prevented by a prompt recognition of the condition and intelligent treatment of the same. Suppurative diseases of the middle ear often follow scarlet fever, measles, etc., and grave brain conditions occur in ear diseases.

A mere recital of the fact will be sufficient that nose and throat affections depend largely upon general diseases; "colds" of constitutional origin standing at the head of the list; then we have syphilitic, tubercular, cancerous, diphtheritic, rheumatic and gouty affections of these parts; also do chest affections, digestive troubles and nervous diseases have important bearings on the conditions of the nose and throat.

It must be plain then that general practitioners are greatly concerned with special diseases and that specialists must keep themselves thoroughly informed in general medicine or the patients of both will not get the best treatment; and it is for this reason that the section of ophthalmology and otology should be held in the same regard as the obstetrical or any other section of the Association. And I do not think the suggestion a good one, which has been made by several members, both general practitioners and specialists, that this section hold its sessions entirely separate from the general Association.

If time would permit and occasion justify we could profitably go more fully into the relationship existing between diseases of the eye, ear, nose and throat and general diseases, and vice versa, but I close by asking for greater consideration of the section of ophthalmology and otology by the Association and hope the section may more and more merit this consideration.

DISCUSSION.

DR. J. C. ANDERSON: It had not been my intention to say anything on this floor, being a new member, but the question of the relation of this Section to the other Sections of this Association seems to me of such importance that I would like to call attention to a habit which I have observed among physicians.

For the past seven years I have attended annually a polyclinic and have found it to be an universal habit among the general practitioners

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to remain in the smoking room, rather than attend the ophthalmological clinic, and if you ask them why they do not attend, they will tell you that they care nothing for the diseases of the eye.

I am a general practitioner, but it is my desire to know something more than general medicine, hence my reasons for attending these clinics, and my opinion is that every physician ought to give some attention to this branch of study, in order that we may be able to make a diagnosis when such cases are brought to him and not have to refer them to the specialist for a simple examination.

DR. LE MOND: In relation to our Section appearing earlier on the program, will say that I do not know what the rules are in regard to this matter. Ever since I have been a member of this Association it has been the custom to put general medicine first and the branches pertaining to it next, and to give opthalmology some place near the end.

DR. J. A. MULLEN: It seems to me that the mere changing of the consecutive arrangement of the Sections would readily overcome the difficulty, i. e., have the programme arranged with the Surgical Section first one year, next year some other Section, and so on.

DR. DAVISS: I agree with what Dr. Hulen says. I think the general practitioner should know more about the diseases of our specialty and their differential diagnosis and that our relationship with the other Sections should be more intimate, for the mutual benefit of both specialist and general practitioner.

If they knew more about our work, they would know when to send the patients they get with any eye or ear trouble to the specialist and when they can treat them themselves with safety and satisfaction to doctor and patient.

It is sometimes quite essential to know when to let a patient alone or send him to some one better equipped for his treatment.

DR. HULEN: I wish to thank the members for the kindly manner in which they have received my paper. I came up from Galveston last night especially to attend the evening session of the Association, expecting the Ophthalmological Section would be called, but on my arrival was told that the Association was out on the barge excursion having a good time, and there would be no night session, I was glad then that I had written this paper, and only sorry that I had not multiplied my complaints, but after witnessing the splendid treatment accorded our Section this afternoon I regret that I had included a single complaint in my paper. I have nothing further to say than that I hope in the future the Ophthalmological Section shall be treated as nicely as it has been this year in Houston.

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SOME OPHTHALMOLOGICAL DON'TS.

S. L. TERRELL, M. D.,

DALLAS, TEXAS.

Don't probe an injured eye.

Don't use atropia in an injured eye where the injury is near the sclero-corneal margin and there is danger of the iris prolapsing.

Don't mistake the white reflex of a detached retina for a cataract.

Don't speak of an eye that is red, very painful, with a shallow anterior chamber and a plus tension as neuralgic, it is more likely to be glaucomatous.

Don't use cocaine freely in corneal ulcers, it disturbs the nutrition of the cornea too much.

Don't fail to make a very careful examination of the tension of the eye in old people before using mydriatics.

Don't operate on a pterygium unless you can keep the eye under daily observation until the wound is entirely healed.

Don't prescribe glasses for young hyperopes until you have tested the refraction while under the influence of a cycloplegic.

Don't be too sure that glasses will relieve all headaches in hyperopes. There may be some nasal obstruction or muscular trouble causing it.

Don't turn patient loose after removing foreign bodies from the cornea until you are absolutely sure you have removed all of them.

Don't promise too much in the way of results in the treatment of injured eyes.

Don't prescribe for a corneal ulcer and then turn the patient loose to treat himself.

Don't try expression in cases of trachoma where the cornea is involved.

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Don't fail to test the muscular balance of the eyes in all cases of asthenopia.

Don't do graduated tenotomies in cases of muscular insufficiencies except as a last resort.

Don't fail to follow the Crede method with the new born.

Don't lose an opportunity of condemning the practice of putting mothers' milk in infants' eyes.

Don't forget that uncleanliness has caused a thousand cases of sore eyes in infants where exposure to the light has caused one.

Don't overlook the fact true ophthalmia neonatorum is caused by the gonococcus and treat it accordingly.

Don't operate for a cataract until you have made the most thorough examination of the eye.

Don't prescribe glasses until you have made an ophthalmoscopic examination.

DISCUSSION.

DR. HULEN: This is an excellent paper, and full of practical points, but there is one "don't" that I cannot agree with the doctor about, and that is, "Don't operate in trachoma when the cornea is involved." I would say, operate on trachoma whenever the condition of the lids require it, even if the cornea is involved. I have operated in these cases, and with good results. In fact, the condition of the cornea depends on the trachoma, and the operation puts the eye in the best condition for the cornea to heal. Of course if there was a corneal ulcer threatening perforation, I would not then operate.

DR. W. R. THOMPSON: I also do not agree with Dr. Terrell in this "don't" about trachoma. If I had a case, provided the cornea was not involved too much, I would operate at once. With this one exception, I think his paper is excellent, and well written.

DR. S. L. TERRELL: In regard to the criticisms of Dr. Hulen on my "don't" in relation to trachoma when you have a corneal involvement, will say that in my practice with trachoma I have not had such good results as Dr. Hulen claims he has had, and I have learned to keep my hands off when the cornea is involved.

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EARLY OPERATION IN PTERYGIUM.

W. R. THOMPSON, M. D.,

FORT WORTH, TEXAS.

For a trouble so common as this very little is said either in the text books or journals. I find after carefully investigating that pterygium is generally considered to be a fold of conjunctiva extending upon, and attached to, the cornea. As to the cause of this condition there seems to be some difference of opinion. Fuchs says it originates from the pinguecula, the degenerative process which exists there making its way into the limbus, and then gradually, upon the cornea itself. The pinguecula, therefore, grows up, as it were, over the cornea, and in so doing draws the conjunctiva after it. The advancing degeneration can be recognized at the apex of a recent pterygium as a narrow, gray, non-vascular, gelatinous looking zone, which forms the anterior border of the pterygium and is quite sharply separated from the transparent cornea. Noyes says, the view most in favor is that because of its laxness the conjunctiva at the the inner angle is folded and rides over upon the cornea where an erosion may exist, an adhesion occurs, and gradually the membrane is drawn over as if one should pluck the lining of his coat sleeve out over its edge. There is no question but that microscopically there is a striking resemblance between some pterygia and pinguecula and it is a well known fact that the conjuctiva is very lax and folded, especially at the inner angle, but as to the erosion of the cornea I am somewhat in doubt. In the first place both eyes are so nearly always affected and the development of the pterygium is gradual and not as one would expect from the adhesion of a fold of the conjunctiva to an eroded spot on the cornea. We know that the attachment to the cornea of every progressive pterygium changes its position; at first it is attached to the limbus, then it makes its way upon

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the cornea, leaving the original point of attachment quite free. It continues to progress in many cases until the pupillary margin is encroached upon. I am a firm believer in the irritation theory, and by consulting the anatomy and physiology of the lids and conjunctiva we see that all foreign substances coming in contact with the eye make their way toward the angle and particularly the inner, and naturally cause irritation. This irritation continues until the blood vessels increase in number and size to such an extent as to cause a marked thickening of the conjuctiva. This condition may, and often does exist for years before we have a pterygium unless we should call this a pterygium. After a time however the apex can be seen to be attached to the cornea, and that attachment gradually gets higher and higher. May it not be that the conjunctival layer of the cornea is reponsible for the extension of the blood vessels, and following them the true conjunctiva. It seems quite possible since we have some intervening space between the apex of the pterygium and the limbus that as the attachment gets higher upon the cornea some absorption or atrophy of the overridden vessels takes place. Should we have the conjunctiva attach itself to an ulcerated or eroded spot on the cornea, though that attachment become greater and extend upon the cornea, we would not expect the original point to give away as is the case in all non-traumatic pterygia.

It was not my intention in the beginning to speak upon the etiology of this trouble, consequently I ask pardon for a slight digression. The treatment of this condition, the point I started out to discuss, is of great interest to both the general practitioners and specialists. It is interesting to the general practitioners because many of them treat and operate on such cases, and to the specialists because they know, as a rule, few eye operations are followed by as unsatisfactory results. From some cause the laity have the idea that the removal of a pterygium is something that requires no skill, and they cannot understand why, in a single instance, a scar should be left or the growth return. It is the custom of physicians generally and

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with many specialists, as well as the teachings of all our text-books except Noyes, to advise non-interference, unless the growth incroaches upon the pupillary space, claiming that no injury to sight is experienced prior to that time. Noyes states that he has seen the vision affected by a pterygium the apex of which was not more than 2 m. m. from the limbus, and he demonstrated by the ophthalmometer that it produced astigmatism of an irregular character, the same being relieved by an operation. In my own practice, astigmatism has been noticed a number of times as a result of pterygium; but one case was sufficiently well marked to warrant special mention. Mr. T., aged 39, presented himself with pterygium of about 10 or 12 years standing. Apex about 2½ or 3 m. m. from the limbus. His vision was $\frac{20}{100}$. His eye was tested with Javal's ophthalmometer, and an irregular astigmatism of 4.5 D. ax. 90 was discovered. The irregularity was nearly entirely confined to the nasal side, and was plainly due to the traction produced by the pterygium. At the expiration of 60 days after its removal he returned for glasses, having been advised to do so. Vision, $\frac{20}{40}$. Javal now shows less than 2 ax. 75, and with his correction a+1.00 eye axis 75, was $\frac{20}{30}$. His sight improved from $\frac{20}{100}$ to $\frac{20}{40}$ without correction after the operation.

Fuchs speaks of a peculiar advancing degeneration at the apex of recent pteregia but he does not state whether this affects the sight. He states further if a pterygium is progressive and is encroaching to any great extent upon the cornea it should be removed. That, in my judgment, is the proper thing to do, provided you can have your patient absolutely under your control, and it can be determined when it is progressive. But with the class of people in whom this trouble is generally found the moment they learn that they are not in immediate danger of loss of sight, and after a few slighting remarks from the doctor whom they have consulted, with generally a wind up with, "you may go a lifetime and not be much affected by this growth," we cannot be surprised if they neglect themselves until the sight is markedly affected in one or both eyes. It does not occur to me

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that our attitude towards these cases is such as to warrant criticism. When we know that under ordinary circumstances an incision in the conjunctiva heals readily with no marked pathological result, why should we allow a patient who is sufficiently interested in himself to consult us, to go until he has a permanent impairment of vision before we advise him to have an operation performed. I dare say while we might operate on some cases unnecessarily, our results as a whole, would be far better if we operated while the attachment is confined to the limbus. The longer a progressive pterygium remains undisturbed the thicker and more widely spread it becomes, and the more liable it is to return when removed. The early removal of a pterygium has the effect of destroying that central leash of vessels so large naturally and capable of such distension, to be found at the inner angle of every eye that is irritated. The complete removal of a small pterygium when the conjunctiva is only slightly thickened can be accomplished with so little loss of tissue that only a small scar will remain, while on the other hand, in pterygia of long standing with thickened bases, no matter how carefully they are removed, an unsightly scar, almost invariably, is the result. As to the method of operating I have nothing to say except in every instance I prefer the tearing or stripping, to the dissecting or cutting for the detachment of the apex, and I think, a thing not mentioned in any of our text books, it a good plan where it is necessary to remove considerable tissue, to freely separate the conjunctiva from the underlying tissues for a considerable distance above and below.

DISCUSSION.

DR. R. F. LEMOND: I think the doctor's paper a good one. For we know that by doing these operations early we can prevent the growth from doing any damage, when if it is let alone it certainly will ruin the eye, both so far as vision and appearance are concerned.

After the corneal complication becomes established, the injury is permanent, as the pigment that is contained in the growth is carried into the cornea and cannot be removed, and of course where there is any pigment at all in that part of the eye it makes the injury permanent. Another reason why they should be removed early is, because the

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operation can never be considered successful if done late, and you cannot tell your patient that this will never grow any more, or give any further trouble, because we know that they do return often when the operation is done after the growth has attacked the cornea, so a rule may be laid down that will always work in these cases, viz., "*operate early.*"

DR. F. D. BOYD: This paper is one that to me is extremely important. I have found pterygiums more prevalent here in Texas than in the Eastern States. I remember while in New York attending the polyclinic that I met a doctor who had gone there purposely to see operations for pterygiums performed and while there several months had only seen one. I agree with Dr. Thompson in early operations for this trouble; we know what the result will be if left alone. There is no danger attending the operation, so what is the necessity of postponing it: the sooner it can be taken away the better it will be for the patient.

DR. W. R. THOMPSON: I do not believe we can lay too much stress on the early operation in pterygium. It occurs to me that delay is often disastrous and I do not see the necessity for it. It is true some of these cases are in no immediate danger, but when the operation is always so successful and absolutely harmless, I say again it is foolish to wait.

In these operations on the conjunctiva healing takes place at once and it does not amount to anything.

I do not think it wise to put off operating for an indefinite time; patients are not capable of telling how fast the pterygium is progressing and often when it has gone too far, they will come to you and want perfect relief. In doing these operations there is but little danger to the cornea, but it leaves a scar.

If I had a pterygium on my own eye, I would have it removed as soon as possible.

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THE USE OF SUPRA-RENAL CAPSULE EXTRACT IN MINOR EYE SURGERY.

JOSEPH A. MULLEN, M. D.,

Fellow of the American Laryngological, Rhinological and Otological Society.

For the amelioration of pain and the prevention of bleeding in minor eye surgery, I desire to offer some obervations of my own, as well as others confirmatory of those reported by Dr. W. H. Bates* on "The Use of Extract of Supra-renal Capsule in the Eye."

The principle upon which its physiological action depends is the contractile power of the extract upon the arterioles, a vaso-constricting action, thereby retaining the absorbed cocaine and increasing its contractile and anæsthetic properties.

It reduces the extra-ocular tunics to a state of ischemia preventing hemorrhage and maintaining anesthesia by keeping the cocaine locked within the tissues. Locally applied it is never followed by any constitutional manifestations, but when given hypodermatically it is, however, attended with dangerous symptoms. The face becomes livid and there is great pain in the chest and head. These untoward effects are unmistakably due to the action of the supra-renal extract upon the small arterioles. † It also decidedly increases blood pressure.‡ According to Drs. J. J. Abel and A. C. Crawford,‖ the blood-pressure-raising constituent is an active sulphate, a pyridine base or alkaloid.

*N. Y. Med. Jour. May 16, 1898.

†Op. Cit.

‡Johns Hopkins Hosp. Bul. No. 76, July, 1897.

‖This fact knowingly or unknowingly has been clinically utilized by Manowsky (St. Peters' Med. Woch., Oct. 30) who recommends that a solution of the extract always be on hand at chloroform narcosis. He cloroformed dogs until the circulation and respiration had ceased. Thirty seconds afterwards he injected a solution of the extract into the jugular vein, restoring them to life. (Jour. Amer. Med. Ass'n, Feb. 5, 1898.)

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The preparation I use is from the supra-renal capsule of the sheep and dispensed to the profession as a powder by Armour & Co.

The solution is made by dissolving grs. V. in dr. I. of cold saturated boric acid solution and filtered. Fresh solution should be prepared for each operation. It keeps very poorly and soon becomes foul smelling. Locally its action is purely one of contraction; it enhances and prolongs the contractile effect of cocaine, after which solution it is always used. The solution is not at all irritating but rather imparts a cooling sensation to the conjunctival membrane. A solution of cocaine five per cent in strength is instilled in the eye and allowed to remain for ten minutes, after which the solution of suprarenal capsule is put in also and in fifteen minutes the surface is ready for operation, i. e., when complete ischemia has taken place. As is well known, cocaine produces on mucous surfaces a contraction of the capillaries, while the extract of supra-renal capsule increases this action to such an extent that when the tissues are incised no hemorrhage occurs, while without the extract, bleeding takes place and the anesthetic effects of cocaine passes away with the flow of blood. The action of the supra-renal on the arterioles is further supplemented by contraction of the subconjunctival connective tissue pulling the membrane down upon the sclerotic preventing, even if the hemorrhage be slight, the extravisation of blood beneath the conjunctiva.

These physiological effects materially increase the clinical usefulness of the extract. It bleaches the vessels in the ptygerium and conjunctiva making the line of demarkation between the two, quite distinct, isolating the former so its removal is readily accomplished. It, however, does not immobilize the tissues so that the suturing becomes difficult. It also greatly lessens secondary swelling and in some unknown manner kindly influences more rapid healing so that the sutures may be taken out earlier and the parts returned to their normal.*

* See article by author, "The Clinical Observation on Use of the Aqueous Extract of Supra-renal Capsule in Operations Within the Nasal Chambers." International Clinics, January, 1898.

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When using the extract for tenotomies proceed the same as in removing a ptygerium until the capsule of Tenon is reached, then instill more cocaine solution, after which the supra-renal capsule is used as before. In this way repeated testing of the muscle can be made until sufficient has been cut for purpose indicated. It is surprising when proceeding in this manner the ease to the operator and comfort to the patient with which the tenotomy are attended and especially is it advantageous as there is very little hemorrhage or pain.

The swelling after incision of ptygeia and tenotomies seems to be milder than when cocaine alone is used, especially when cracked ice is applied to the parts after the operation. When operating on the drainage apparatus of the eye, cocaine solution is first instilled into the conjunctival sac and then a small quantity of the same solution is injected into the lachrymal sac and nasal duct. This is followed by a similar instillation and injec tion of the extract. Fifteen minutes after the canuliculus can be opened and the stricture of the nasal duct incised. The operation is almost bloodless and painless. A decided improvement over the use of cocaine alone. Its advantages over the use of cocaine alone are, first, to increase the anesthesia of cocaine; second, it with cocaine produces ischemia of the mucous tissues; third, in some kind way it modifies post-operative swelling; fourth, materially enhances rapid healing of the parts. I have never seen any evidences of cocaine toxemia when the extract had been used.*

These advantages are quite valuable and entitle the supra-renal capsule to a confident place on our list of medicinal substances for use in the eye.

The astringent action lasts from one hour to an hour and a half and is followed by no injurious effects to the cornea, etc. The extract does not cause dilatation or contraction of the pupil and is devoid of any action on accommodation, and with Dr. Bates, I believe that within the limits of its sphere of activity,

*Op. cit.

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there is absolutely no other substance which can take its place in minor operative procedure on the eye and its appendages.

DISCUSSION.

DR. BOYD: I simply rise to express my appreciation of the paper. I have never used this extract, but do not doubt that it will do the work in minor operations; Dr. N. H. Bates, of New York, has used it and has spoken of it very highly.

DR. E. P. DAVISS: I have tried it in a good many cases of nose and throat operations and have gotten very satisfactory results. I have not used it in eye surgery, nor believe it practicable. I do not understand how it could prevent hemorrhage in operations for relief of stricture of nasal duct as Dr. Mullen suggests, as it is impossible to get the extract beyond the point of stricture, whereas the hemorrhage resulting from such an operation comes from a point *beyond* where the stricture commences. While the operation for squint and pterygium is accompanied by so little hemorrhage as not to require such an astringent agent—indeed I think the irritating effect of an astringent would more than counterbalance any good effect claimed for the extract of supra-renal capsule in operations about the eye and its appendages; while in operations on nose and throat, this agent is a useful adjuvant.

Dr. J. T. WILSON: I would like to know how this extract is applied? Does it become readily absorbed in the tissues? Is anything else added to it?

DR. THOMPSON: Where this extract is used in operations on the eye, I do not think that the hemorrhage amounts to much. The price of this preparation is $2 a dram, therefore I do not think its use will be very extensive.

Of course this might be used with advantage in some diseases, but in the ordinary operations on the lids and conjunctiva, I have never found any difficulty in controlling the hemorrhage; so I think that when you sift it down that the use of the preparation covers a very limited field, caused mainly by its expense.

DR. WM. KEILLER: While I have had no experience with supra-renal capsule extract in eye surgery, I wish to say that from its remarkable action in contracting the arterioles and thus raising blood pressure, seem to indicate that it would be a valuable drug in combatting surgical shock, and I think that this might be kept in mind by surgeons and some experiments made with it.

DR. J. A. MULLEN: The discussion elicited by my paper fully repays me for any trouble I may have had in preparing it. In regard to

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Dr. Keiller's remark bearing upon the use of the extract in surgical shock or anesthetic narcosis, I can only say that I think it would be a very good procedure to administer it in these conditions, as pointed out by Maukowsky, as I have had no experience with the extract in this respect.

I have used supra-renal capsule extract for the past eighteen months, and in this time have performed a great many minor operations on the eye, eye-lids and naso-lachrymal system, with very gratifying results to myself and patient.

I have also used it for the same length of time in all my nasal operations. In one case of ethmoiditis, I opened, drained and packed the sinus on both sides with the patient sitting in my operating chair. The bleeding and pain were very slight, nor was there a symptom of cocaine poisoning.

My results have been invariably better since using the extract after applying cocaine solution, than when I used the latter alone.

I have never had a case of cocaine poisoning in my practice since I began the use of this remarkable preparation.

For use in nasal work it should be prepared the same as in eye-work. *It is not to be used after the bleeding has begun*, but always following the cocaine anesthesia. I might also add in this connection, that I have published an article on the nasal use of supra-renal capsule extract in the January number of the International Clinics, the first contribution, I believe, on the subject.

The extract is supplied by Armour & Co., Chicago, in one-dram bottles, at $2 each.

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SUPERFICIAL KERATITIS—MALARIA AS AN ETIOLOGICAL FACTOR.

FRANK D. BOYD, M. D.,

FORT WORTH, TEXAS.

Malaria being such a prime factor in the etiology of so many diseases man is heir to, I am persuaded that there is no doubt that it enters into many diseases of the eye, that we, as specialists, often overlook in the treatment.

In getting a history of our patients we should never fail to inquire into their locality whether there is apt to be any malaria in their symptoms. Only in the last few years has there been any marked attention paid to this etiological factor. This disease appears in various text books under several forms and described under many names, viz: keratitis superficialis punctata; keratitis subepethelialis centralis; keratitis maculosa; relapsing herpes cornea; nodula keratitis, etc.

Malaria is no doubt due to an animal parasite known as the plas modium malariæ. Every doctor, in the South especially, has been thoroughly introduced to malaria and its evil effects, etc., so I shall not enter into a description of malaria, but shall confine this paper to its effect on the eye, especially keratitis involving the epithelium.

In malarial attacks certain eye symptoms form a part of the attack or may even be a substitute for it. A very characteristic feature of this disease is its periodical attacks coming on at regular intervals, and the rapidity with which it yields to the use of quinine and arsenic, and its stubborness in not yielding whenever this is not administered, or some other malarial treatment. Neuralgias, especially the supra-orbital form (occasionally the ciliary) are very frequent. Amblyopia (central) and even complete blindness without opthalmoscopic findings or loss of the pupillary reaction to light have been observed as part of severe

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attacks and also in latent malaria. Hilbert in 1881 describes conjunctival catarrh as a rare form of latent intermittent fever. It occurred four times in the tertian type; was attended with splenic enlargement, and was cured by quinine. Meisburger in 1883 also mentions conjunctivitis; Adams in 1881, iritis; Seleuck in 1889, five cases of plastic iritis; Dubeler in 1883, blindness with exopthalmus. Intermittent strabismus has also been described. Baas in 1885, report a case of blue vision which appeared every other day between 10 and 12 a. m., and cured by quinine. According to Sulzer, hyperemia of the disc, slight obscuration of the fundus, photophobia, and seeing sparks are observed in twenty per cent of the cases during and between the attacks. These cases exhibited a marked predisposition to macular affections similar to those observed in looking at an eclipse of the sun, but the prognosis is favorable. We often find, as in other infectious diseases, quite a great many complications. Sulzer's report includes neuritis, usually bilateral in severe cases with pigmentation of the papilla, with eight per cent with termination in atrophy of the optic nerve; diffuse vitreous opacities; multiple retinal hemorrhage; sudden and permanent blindness.

Macnamara in the British Medical Journal, March 8, 1890, reports a peresis of the external and inferior recti. Baget reports two cases of double soft cataract, all due to malaria.

If we examine our patients with the opthalmoscope after having a long siege of malaria, we will often find a deposit of pigment in the fundus. From a number of tests I have made on students that were willing to undergo the effects quinine would have on their eyes, I have discovered that it will produce temporarily some of the same effects that malaria will produce, viz: hyperemia of the fundus; injection of the occular conjunctiva and dimunition in the vision, but all of this was only temporary.

Among the various diseases mentioned that has for its etiological factor, malaria, superficial keratitis or inflammation of the cornea especially involving the epithelium, stands out pre-eminently the greatest. Noyes' second edition gives malaria as one

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of the possible causes of asthenopia, iritis, and lays special stress on its being one of the prime causes of superficial keratitis. Pages 388-389, he has this to say: "A form of superficial keratitis dependant on malaria has attracted my attention for many years. Some of my cases published by Dr. James L. Minor, in American Journal of Medical Sciences, 1881. The lesion is confined to the epithelium and anterior layers. It is attended by ulceration, rarely by much inflammation, although this may become supurative. The conspicuous feature is the blunted sensibility of the cornea, and the consequent slight photophobia. The touch of a lock of cotton will scarcely be noticed. There will almost always be tenderness of the supra-orbital nerve at its notch and pain in its radiations. There will also be a history of malaria, and probably of the chronic type. Dr. Kipp, of Newark, N. J., has reported observations of the same character, and like myself is firmly persuaded of the malarial etiology of the diseases."

Dr. Kipp also called attention to the peculiar irregular streaks in the cornea which resembles, to me, quite a similarity to the beginning of interstitial keratitis. Noyes recommends full doses of quinine and and arsenic in this disease.

Desscheinwitz in his second edition mentions malaria as one of the main causes in many diseases of the eye, especially diseases of the cornea, and recommends full doses of quinine. Fuchs' second edition mentions malaria as being one of the causes of the superficial form of the keratitis, but only casually. In my private practice I have seen numbers of cases of diseases of the eye no doubt being due to malaria. One case I remember distinctly. A young lady, age 23, school teacher, that came to me about eight months ago. She gave a history of repeated attacks of eye trouble coming on at regular intervals, probably about three months apart. The eye or eyes, mostly confined to one eye, or vice versa, would become sore quite suddenly, and in less than twenty-four hours she would discover an ulcer on cornea and often several. Intense pain over the eye and profuse lacrymation. She was anemic and gave history of having

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fevers at regular intervals, but very light. She had been treated for a number of attacks and with the regular treatment of keratitis. She soon recovered, but would have another attack in a short time. I placed her on quinine, arsenic and iron, of course using the regular local treatment for the eyes, keeping her on constitutional treatment for five or six weeks, and up to the present time she has not had a return of the trouble.

I could mention a number of such cases that have come under my personal observation, that, unless I would push the quinine, there would continue to be a return of the old trouble.

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EVOLUTION OF OUR OPERATION FOR ARTIFICIAL PUPIL.

E. P. DAVISS, M. D.,

HOUSTON, TEXAS.

The nineteenth century has been marked by great advances in all branches of science and of many arts. Experimental research, invention, progress, these are the mileposts most conspicuous since the death of the eighteenth century, and which direct us ever onward to more brilliant achievements as we approach the twentieth cycle,—now so nearly reached.

Napoleon entered upon his matchless career in the infancy of the present cycle and with the sword forced the world into a quicker pace and every decade since has furnished its Napoleon in some distinctive and progressive line. It has truly been a Napoleonic century, and medicine and surgery have not failed to keep pace with the advances of the times; for chemists have given us ether, chloroform and cocaine. The inventors have given us the optholmoscope, microscope and the X-ray, to say nothing of the thousands of other adjuncts in medicine and surgical appliances and instruments to facilitate diagnosis and treatment which have brought our profession into the fore ranks of science and art.

In no branch, perhaps, has there been greater progress than in that which pertains to the eye. The ophtholmoscope brings us into intimate acquaintance with the inner and deeper structures of the eye once so little familiar even to our most learned professors.

Cocaine and chloroform came to us like angels of mercy robbing the "operation" of its terror while the well nigh perfect surgical instruments enable the surgeon of today to do his work with neatness and dispatch.

The operation for artificial pupil, though not belonging

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wholly to this century, was done most crudely in the latter part of the last; and its evolution into the modern iridectomy, as given in De Schweinitz, Jueler, Meyer and others, is the outgrowth of the nineteenth century progress and is attended with neither pain nor shock, though it was no uncommon thing in former times for patients to faint from the pain of operation before the advent of anesthetics.

Cheseldon is reputed to be the first who operated on the iris for the purpose of forming artificial pupil toward the latter half of the eighteenth century.

Professor George Frick, the eminent oculist connected during the first quarter of this century with the medical school of Baltimore, in his translations of Professor Beer's "Doctrines and Practice of the Most Eminent Modern Surgeons," published in 1823, thus describes the early operation for artificial pupil. Cheseldon's mode, he tells us, of operating was to sit the patient in a low chair without a back in such a position that the head of the patient is on a level with the breast of the surgeon. He adds, it is utterly impossible to operate with the patient in a standing position as the surgeon, if *small*, must lift his arms very fatiguingly to reach the eye of his patient, or, if *very tall*, must bend his body in no less uncomfortable manner, and as the patient is liable to faint, he would fall without the surgeon being able to assist him. Dr. Barthe preferred to operate in this position *without* an assistant, by fixing the patient's head against the wall, opening the lids with *one* hand and *operating* with the other. The upper eye lid, he says, should be held by an assistant, who supports at the same time the head of the patient upon his breast. The surgeon holds the under lid, permitting the fingers to project a little toward the ball of the eye, to check the motion of the eye inwards as it *flies away* from the knife. *He* says all mechanical means of separating the lids or fixing the eye should be avoided or rejected.

It is a wonder to me that any operation was a success under such conditions and modes of procedure. Having thus secured the eye he introduced through the sclerotic at a distance of two

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lines from the cornea, a *couching* needle, sharp on one side only. When the point of the needle reached the internal side of posterior chamber he thrust it from *behind* forward, through the iris, dividing *it* transversely.

Dr. Janin, since Cheseldon's day, attempted the operation twice, but found the wound to close again and so abandoned it. Dr. Sharp, who was *first* to imitate Cheseldon, met with the same results. He employed the same needle as Cheseldon, but introduced it through cornea into the *anterior* chamber; though, in this operation, he penetrated the lense and thus injured rather than benefited the eye.

Janin, having failed in his first effort, observed *accidentally* in extracting a cataract, that the *vertical* incision he made in iris did not heal as did the transverse, and was induced to try the operation by practicing perpendicular incision; and his success in this instance quite *equaled* his expectations and gave good results in four cases. Succeeding attempts failed to get the results claimed by Janin and the operation fell into disuse.

At this time the existence of circular and radial fibers of iris was denied by all except Mannior, of Geneva, who wrote a treatise on the subject in 1811.

Professor Scmidt, of Germany, gave this operation the name of coretotomia, signifying a simple incision of iris without loss of substance. Another he termed coreto-nectomia, or the incision of iris *with* loss of substance.

Coretodyallis is the separation or tearing asunder of this membrane from the ciliary ligament.

Wenzel, Sr., was the first to propose and put into execution the cutting out of part of iris to secure permanent artificial pupil. He made his incision in cornea, and lifting portion of iris with a hook removed it with scissors.

Guerin modified Wenzel's operation by making crucial incision in iris and removing the four angles of the cross with scissors.

About 1811 Gibson, of Manchester, in his "Practical Observations on Formation of Artificial Pupil," did the operation thus:

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With lance-shaped knife he makes an incision of three lines on cornea, them withdrawing knife allows free escape of aqueous. The iris falls into wound, and is made to protrude by gentle pressure, and this portion is cut off. The iris will then, he says, recede into the eye, making an artificial pupil more or less sound.

About 1817 Professor Beer performed the operation in much the same way, except that he drew out the protruding knuckle of iris with hook, cutting it off while tense, so that the remaining iris returned to anterior chamber having a well shaped pupil as the result.

Although the facility with which the iris may be torn away from its attachment was known years prior, the practice of koretodyalisis was not introduced till 1802, by Dr. A. Scmidt in Germany, and by Scarper in Italy about the same time.

Assalini claimed to have done it in 1787, and Buzzie, of Milan, about the same time, but neither published the fact til' after the reports of Scarper and Assalini.

Scarper abandoned the operation as useless, as shown by his treatise on the principal diseases of the eye, translated by James Briggs, of London, in 1818.

Dr. Scmidt, instead of piercing the schlerotic like Scarper and entering the iris from behind, made a section of the cornea with a lance-shaped knife opposite where he intended to make his artificial pupil, and introducing a pair of forceps seized the iris near its ciliary border and tore it from its attachments.

Professor Beer modified his first operation to that of Reissinger, which consists in strangulating the iris between the edges of the cornea, leaving it to unite in the cicatrix.

Professor Himly attempted to excite permanent dilatation (to obviate the necessity of operating in the cases) by long continued use of hyoscyamus, but this project failed. Himly advised couching of lens prior to operation for artificial pupil, but had small following in this method. The experiments of operators along this line for the past fifty years have been legion. Divers instruments for and modes of operations have

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been recorded in our text-books, and many more read before medical associations. Most of these have become obsolete, and only those retained that are stamped with the approval of merit and may be found described alike in most of our late standard works.

The object for which iridectomy is performed and the condition of cornea will suggest the size of pupil to be made and the location to be selected for the operation, and the following details given by Dr. DeSchweinitz are those in general use by modern surgeons.

The thorough antisepsis and sterilization of all parties to the operation, and all instruments or other materials used in connection with the operations of today are so generally understood and practiced that I will not burden the patience of this Association by consuming its time with the minutia of its detail, but will proceed at once to give the mode of operation as practiced at this date.

For iridectomy of today, the following instruments are necessary: Stop speculum, fixation forceps, bent keratome, iris forceps, blunt hook, iris scissors, and horn spatula. The operation is thus performed:

The patient being in a recumbent position, and the eye being under the influence of cocaine, the surgeon separates the lids by means of an ophthalmostat or eye speculum, fixes the eye by seizing with forceps the conjunctiva and subconjunctiva tissue at a point directly opposite to that of the proposed section, and introduces the lance-shaped keratome in the following manner: The point of the knife is brought into contact with the apparent corneo-scleral margin, or, in some instances, about a millimeter from the junction of the sclera with the cornea, and in a direction at right angles to the cornea, which direction it keeps until the point penetrates into the anterior chamber. The handle is then well depressed, so that the point of the knife shall not wound the iris or lens, while the blade is slowly thrust onward until the section is made of the desired extent. The knife is then slowly and cautiously withdrawn, keeping its point well

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forward toward the posterior surface of the cornea, so as to allow a slow escape of the aqueous humor, and to avoid scratching the capsule of the lens. As a rule, I prefer to make the incision with a Grafe knife. Always when iridectomy is for glaucoma or in the upper quadrant of cornea is done.

The first stage being completed, the fixation forceps is handed to an assistant, who rotates the globe a little downward; when the section has been made, the surgeon introduces the curved iris forceps, expanding the blades so as to grasp the pupillary margin, cautiously withdrawing the forceps with the included portion of the iris and snipping off the latter close to the wound with one or two cuts with a delicate pair of curved scissors.

If the anterior chamber is very shallow, it is safer to substitutue for the lance-shaped instrument a Grafe cataract knife, making a puncture and counter-puncture and then cutting in the same manner as when the corneal section in cataract extraction is made.

If the section of the iris should cause hemorrhage into the anterior chamber, an attempt may be made to remove the blood by separating the lips of the wound with the horn spatula, and making very cautious pressure on the cornea, but triturating movements carried on to any extent are done at the risk of bruising the lens and causing cataract. The conjunctival culde-sac is disinfected with a warm saturated boric acid solution, and the length of the wound, and *especially* its angles, are inspected to see that the iris is not entangled. Should there be any entanglement of the iris, an endeavor should be made to disengage this with the point of a horn spatula. If the wound appears *clear*, the eye is dressed in the same manner as after cataract extraction. One or both eyes may be bandaged. The author prefers to bandage both of them for the first twenty-four hours. I rarely bandage more than one eye. Usually the healing is kind, the anterior chamber is quickly restored and the bandage may be removed at the end of forty-eight hours, and the patient directed to wear a shade or dark glass. This,

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in general terms, describes the method of performing an iridectomy, which, however, may require certain modifications according to the judgment of the operator.

(*1*) *Position of the Operator.*—The operator may stand behind the patient's head and push the knife from him if he is making an upward section, or he may stand in front of the patient and push the knife toward him in a similarly made section. The latter procedure is recommended if the anterior chamber is shallow, as the operator can more readily watch the point of the knife. This direction refers to the lance-shaped keratome. The author prefers to stand behind the patient's head.

(*2*) *Point of Entrance of the Keratome.*—This depends upon whether the irridectomy is for optical purposes or for the relief of intraocular tension. If for the former, its position should be exactly at the apparent cornea-scleral border; if for the latter, farther back, about a millimeter from this position, passing through the sclera.

(*3*) *Position of the Iridectomy.*—If the iridectomy is for optical purposes, the point of selection is governed by the conditions of the cornea. The best position for an artificial pupil is inward or inward and downward, other things being equal.

If the operation is to restore a pupil to an iris which has been bound down by extensive synechiæ, that portion of the iris is exercised which is least attached. Generally, it is best to perform the section upwards and make a broad iridectomy. The same is true if the operation is performed for a partial cataract, although its exact position must be governed by the exact position of the lens.

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REPORT OF ANOMALOUS CASES FROM THE RECORD BOOKS OF THE TEXAS INSTITUTION FOR THE BLIND, AND THE TEXAS, EAR AND THROAT CHARITY HOSPITAL.

H. L. HILGARTNER, M. D.,

AUSTIN, TEXAS.

Mr. President and Gentlemen:

In the preparation of papers suitable for presentation before the State Medical Association I have always tried to cast about for some subject which, while within my own specialty, might be of interest to the general practitioners. In the following paper I have at least partially fulfilled this requirement. I shall report four cases from the records of the State Institution for the Blind, and from the Texas Eye, Ear and Throat Charity Hospital.

The first case is unquestionably of general interest, if merely as a curious anomaly. This case has already been presented before the Travis County Medical Society one year ago by Dr. Harper and myself. For general description and history of the case, I cannot do better than reproduce Dr. Harper's report which was as follows:

"It is through the kindness of Dr. Becton that we have before us tonight this boy, in whom we have indeed an anomaly. He is a student at the Institution for the Blind. According to his own statement and that of his father he is 13 years old, and yet we see on his face a growth of beard as is usually found on a man 23 or 24 years of age. He answers readily and intelligently when spoken to, and through him and his father we are able to arrive at what might be regarded a tolerably fair history of the case.

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"It is about as follows:

"During infancy his features were markedly effeminate. At five years of age he had measles, and eight months later whooping-cough, both of which went very hard with him. About this time the features began to change, and at the age of eight, signs of premature manhood began to develop. This development has gradually continued to the present time. Two years ago—January 31st—he was attacked with nausea and vomiting which continued without ceasing (vomiting every day) until the following 1st of September. During this time—about the 1st of May—his became crossed and his vision commenced to fail, and by the 15th of August he was totally blind. His body was bloated and perfectly paralyzed. He was in the care of two physicians from the beginning of the nausea and vomiting until the last of August—about eight months—at which time they stated they could do nothing, one having made a diagnosis of "Dropsy of the Brain," the other of "Fatty Tumor at Base of Brain." I obtained the addresses of these two physicians and wrote to each, hoping to secure a brief but detailed report, as well as a professional opinion of the case. Nothing was heard from either. After the two physicians above referred to "gave up the case as hopeless," a "Massage Doctor" was allowed to administer treatment. It was during this treatment that the boy's eyes "flew back straight" and his vomiting ceased. His sight has never returned. It was six months after these decided symptoms of improvement appeared before he was able to walk.

"As you see him tonight he is strong and active.

"Upon a physical examination I find the genital organs somewhat more fully developed than those of the average thirteen year old boy.

"When he came to the institute, nearly four weeks ago, he was having frequent nightly emissions, but he tells me today he has not been bothered with this since he commenced taking the medicine which Dr. Becton gave him immediately after his arrival.

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"His mind does not seem to have been affected by his sickness. At the time he lost his sight, according to his statement, he had attended two sessions at school, was reading in the Fourth Reader, and had learned to add and subtract. This may be considered fairly good for a boy of his age in a country school. His teacher at the Blind Institute tells me he promises to make good progress in the school-room. The boy is in good health, and has an even temper and a quiet disposition. For the report upon his eyes, I refer you to Dr. Hilgartner who has thoroughly examined the case."

In regard to the condition of the eyes in this highly interesting case, I will state the salient facts as briefly as possible. External appearance normal; cornea clear in both eyes; pupils dilated (as is usual in cases of amblyopia) and readily respond to light stimulation; conjunctiva, both ocular and palpebral, healthy. Ophthalmoscopically, we find complete atrophy of both optic nerves; fundus in other respects presents nothing unusual. The patient has no perception or sensation of light whatever.

The most striking peculiarity in this case is an extraordinary power of voluntary contraction and dilation of the pupils. When he dilates the pupils, the axes of both eyes are perfectly central. During extreme contraction a slight turning inward (cast of one degree) is observable in the left eye. The youth can dilate the pupils at will to a diameter of 4½ m. m., and contract them to a diameter of 2 m. m. Upon interrogation to discover whether this activity of the iris was associated with any sensation or simulated emotion (for we know that joy, love, anger, hate, etc., have a normal effect upon the pupils of the eye) the patient replied that he never experienced anything of the kind, did not know how he did it, did it just as he would voluntarily close his eyelids, though with somewhat more effort. The exercise did not seem to be fatiguing, and during numerous repetitions he never failed to respond—just as if he had been asked to close or open his eyelids.

There does not seem to be ground for any very suggestive

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deductions from this phenomenon. The question in my mind is, "have some fibres of the nerves supplying the muscles of the iris become connected with voluntary centres of the cerebrum, and if so, how?"

* * *

I beg to report a second case presenting conditions peculiar in their association. Mycrophthalmis, with persistent hyaloid artery in both eyes, and a coloboma of the iris and choroid, occurring in a young lady 17 years of age, a pupil in the Institute. Both eyes, congenitally diminutive, present constant nystagmus with vision of 5-100 in each eye, not improved with glasses. Ophthalmoscopic examination shows a floating body attached to the edge of the optic nerve in each eye, along with a central downward coloboma of the iris which is continuous in the choroid as a brilliant white area extending toward the pupilla. The young lady seems to be in good health and well developed. No family history of eye trouble.

* * *

The third case to which your attention is invited is one of multiple pupils (polycoria) occurring in a girl 12 years of age, a deaf mute, who consulted me on account of defective sight. Ocular examination revealed double nystagmus with clear cornea and three peculiar oval spots in the left iris on the nasal side. The ophthalmoscope gave, besides the red reflex for the pupils, three small red reflexes, oval and corresponding to the said spots. In a word these spots were abnormal pupils. The central pupil was of normal size, and of normal properties. The lateral pupils were found to be mere holes in the iris devoid of contractile power.

* * *

The next case to be mentioned, a case of tarsitis, is brought to your notice on account of its rarety, there being only twenty odd such cases on record. A Mr. P., aged 26, consulted me February 1st, 1898, with following history. Right eye became inflamed three days previous. Could assign no cause. General

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health claimed to be good. Absolute denial of any specific history. The right lid was swollen and drooped, leaving a space of 2 m. m. between lids. There was swelling of the entire lid, with redness of the skin, especially marked near the edge. Lifting the lid a kemotic condition of the conjunctiva was observed, overlapping edge of cornea 1 m. m. Little or no secretion; clear cornea.

Not suspecting syphilis, we merely gave the patient a mild astringent wash, with instructions to return the next day. Upon his return no improvement was noticeable, and same treatment was continued for another day. On third day patient complained of pain in front of right ear. Examination showed a swelling over parotid gland extending down to jaw and neck. Questioning concerning veneral trouble was then renewed, and finally admission of small sore on the penis some weeks previous, but long since healed, was elicited. Examination of penis revealed a small scar on glans. Mixed treatment was ordered and patient slowly improved, and at present all swelling of conjunctiva has disappeared and upper lid has resumed nearly normal thickness and color. Swellings over parotid gland have disappeared.

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TRANSPLANTATION OF THE RABBIT CORNEA.

ROB'T F. LEMOND, A. M., M. D.,

Professor of Diseases of the Eye and Ear, Gross Medical College, Denver, Colorado.

In December I had a patient brought to me, a man 53 years old, who had been blind for six years, so completely that he could not tell day from night, unless exposed to the sun. I examined him very carefully, and found the following conditions: He had been in an explosion six years before, and one of his eyes was completely blown out, leaving nothing but the vacant orbit, while the other eye was filled with powder and all the debris that goes with an explosion of this kind. He was so badly hurt that they thought it entirely unnecessary to go to an oculist, as his eyes seemed to be beyond all repair, and the physician in attendance thought the only thing to do was to keep the wounds clean and allow them to heal.

I advised an operation, an iridectomy, as I could see that there was a very small amount of the cornea which seemed to be clear enough for some light to reach the retina, provided there could be made a sufficient opening in the iris. I took the patient to the hospital and made the operation, but when I cut through the cornea I found that the iris was very tightly adherent to it, and there was no separating the two. I was somewhat surprised, when I scraped some of the iris away from the cornea, to find that the membrane Descemet has absorbed so much of the coloring matter from the iris that it was perfectly opaque.

I then advised the patient to wait a few days and allow the wound to heal, when I would try another operation, explaining to him what it was, and telling him at the same time that it was a good deal like a man catching at straws. He was anxious to take any and all chances where there was the slightest possi-

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bility of getting any vision. I sent out to a rabbit nursery and got a fine healthy rabbit, nearly grown. The operation was not after the same plan usually followed in these cases. Prof. Fox, of Philadelphia, and Von Hippel, of Europe, who have done the operation a number of times, trephine down to the membrane of Descemet, but do not go through that layer of the cornea. As I said before, in this case the iris and cornea were tightly sealed together, and to have taken out all the layers down to the last mentioned would have done no good at all, as it was so thoroughly saturated with coloring matter from the iris that it was simply impossible for any light at all to penetrate it.

Therefore I decided to take out the entire layers of the cornea, which I did. I used a five per cent solution of cocaine on the eye, which rendered the operation painless. I took out about three-fifths of the cornea right in the center. I then took, as nearly as I could guess, the same sized piece from the rabbit's cornea, the rabbit being thoroughly under the influence of chloroform, and after trimming it to the size of the opening in the patient's cornea, I placed it very carefully in position, and stitched it in place with four stitches of fine silk. I then brought the lids together and stitched them tightly and allowed the stitches to remain three days. I then removed the stitches and dressed the eye with a solution of boric acid, fifteen grains to the ounce of water, and placed a light bandage on the eye. After the fifth day the corneal stitches were removed.

To secure the best results possible and to prevent the implanted cornea, if possible, from becoming cloudy, I had the patient remain under my care for two months longer, seeing him almost daily.

The results in these operations have never been entirely satisfactory, for the reason that the membranes to which the transplanted cornea is to attach itself are in an unhealthy condition, and consequently do not favor perfect union.

I had done this operation about eighteen months before, and it was not a success, at the same time I had been able to give

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the man sufficient vision that he could point out large objects when close to him. I, in the meantime, had corresponded with a number of our noted oculists, nearly all of whom had tried this experiment, but none of them, except Dr. Fox, of Philadelphia, had met with very much success. He made one patient see sufficiently well to go about the streets, and keep out of the way of street cars and any impending danger without trouble, but he finally lost sight of this man in the course of about sixteen months and has not heard from him since.

With this last case of mine I have kept in close touch with him, up to a few days ago, and he is holding all the vision that he had when he left me. I thought that I could fit his eye with a glass that would help to some extent, his visual acuity, and I was astonished, after I had fitted him with a twelve dioptric plus lens, it increased his vision very much, and he could point me out anywhere in the room, without any trouble, besides he counted his fingers rapidly, and wept like a child, to think that he had been made to see some, after having been blind for six long years.

I think that we should be encouraged to try this experimental work still farther, and I, myself, will not be willing to give it up, as long as I can get such results as I have already obtained. This man was questioned, just before he left, in my office, by a number who had called in to see him, having heard of the operation, and he was asked what he would sell the amount of vision that he had for, and his reply was that there was not enough money in Denver to buy it.

DISCUSSION.

DR. HULEN: It is as astonishing as it is gratifying to hear the report of such success with this operation as we have just listened to, when the most eminent ophthalmic surgeons in Europe and America, after a very great many expriments with it, conclude that corneal transplantation is invariably a failure in the end. I have never before heard that the final *result* justified this operation, and I have been forced by reports of the failures to abandon all hope of success from this procedure. Dr. LeMond's success, as reported in his case, is wonderful.

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DR. THOMPSON: The doctor does not say what was the size of the piece of cornea that was transplanted? He failed to say anything about the stitches in this operation, and if they were of silk. If the piece of cornea was very large, it would require four stitches. Was there any sloughing?

DR. J. T. WILSON: In this plastic operation I would ask the doctor if the remaining cicatrix was very marked and interfered with vision? Was the adhesion of the artificial cornea perfect, and did it become clear or was there a cloudy zone?

DR. R. F. LEMOND: In reply to Dr. Wilson will say that there was a little cicatrix where the wound was made, but not enough to attract any attention to speak of, or to do any amount of damage, as the remainder of the cornea of the man outside the incision was perfectly opaque any way; there was one place at the junction of the two pieces that did not unite very well and I took the scissors and trimmed it a little and then the union was made all right.

In answer to Dr. Thompson will say that the size of the piece transplanted was about three-fifths of the whole cornea, and the incision was made between the sclero-corneal junction and the center of the cornea and the piece that I removed was taken as a measure so that the piece of the rabbit cornea could be made the same size exactly, in order to make a good fit. I used silk in stitching the pieces in, and then stitched the lids together and kept the eye at perfect rest for three days; there was no great amount of discharge; for a few days I kept a light bandage on the eye, after the stitches had been taken out of the lids.

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LIST OF MEMBERS

OF

The Texas State Medical Association,

OF

AUXILIARY ASSOCIATIONS IN AFFILIATION,

AND OF

OFFICERS SINCE ORGANIZED.

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In Memoriam.

Dr. W. J. Burt, Austin, Texas, died July 10, 1886.
Dr. H. W. Moore, Fort Worth, Texas, died September 26, 1886.
Dr. G. K. McGregor, Waco, Texas, died May 12, 1884.
Dr. J. K. Meek, Ennis, Texas, died November 11, 1886.
Dr. James Haley, Moffat, Texas, died February 20, 1887.
Dr. J. S. Willis, Waco, Texas, died July 6, 1887.
Dr. A. Welch, ————, died September 22, 1886.
Dr. J. T. Howe, Huntsville, Texas, died August 13, 1888.
Dr. Z. W. Baker, Temple, Texas, died December 13, 1888.
Dr. A. C. White, Cuero, Texas, died December, —, 1888.
Dr. F. A. Tompkins, Sandy Point, Texas, died July 26, 1888.
Dr. J. M. Ross, Brenham, Texas, died February 10, 1889.
Dr. Y. D. Harrington, Terrell, Texas, died June 9, 1889.
Dr. H. P. Downman.
Dr. J. L. Felder, Jr., Pittsburgh, Texas.
Dr. W. H. Hardison, Fort Worth, Texas.
Dr. W. D. Kelley, Galveston, Texas.
Dr. Ed. Randall, Galveston, Texas, died November 13, 1889.
Dr. A. R. Kilpatrick, Navasota, Texas, died September 19, 1887.
Dr. Ashbel Smith, Cedar Bayou, Texas, died January 21, 1886.
Dr. S. F. Starley, Tyler, Texas, died December 19, 1887.
Dr. J. M. Lewis, Mexia, Texas.
Dr. S. T. Lowry, San Antonio, Texas, died June 30, 1890.
Dr. W. H. Park, Tyler, Texas, died November 4, 1885.
Dr. J. B. Robertson, Goliad, Texas.
Dr. W. L. Rogers, Galveston, Texas, died April —, 1887.
Dr. R. B. White, Ennis, Texas.
Dr. J. H. Martin, Dallas, Texas, died July 18, 1887.
Dr. E. J. Carothers, San Antonio, Texas.
Dr. A. E. Carothers, San Antonio, Texas.
Dr. G. W. Tucker, Comanche, Texas.
Dr. S. A. Towsey, Galveston, Texas.
Dr. Etien Mellou, Brownsville, Texas.
Dr. W. E. Saunders, Sherman, Texas.
Dr. Hilary Ryan.
Dr. W. A. East, Hallettsville, Texas, died December 5, 1885.
Dr. L. S. Cabell, Charlotteville, Va. [Honorary.]
Dr. Willis Westmoreland, Atlanta, Ga. [Honorary.]
Dr. J. H. T. King, Laredo, Texas.
Dr. S. H. Smith, Dallas, Texas.
Dr. A. A. Terhune, Jefferson, Texas.

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Dr. L. J. Graham, Henderson, Texas, died April 15, 1891.
Dr. F. T. Paine, Comanche, Texas, died April 16, 1891.
Dr. G. W. Kerr, Waelder, Texas, died April —, 1891.
Dr. T. S. Burke, Corpus Christi, Texas, died September 21, 1891.
Dr. W. T. Strain, Wills Point, Texas, died November 1, 1891.
Dr. W. W. Reeves, Austin, Texas, killed December 29, 1891.
Dr. T. M. Stone, Jasper, Texas, died January 18, 1892.
Dr. E. J. Ward, Waxahachie, Texas, died December 17, 1893.
Dr. E. G. Nicholson, Del Rio, Texas, died February 3, 1893.
Dr. M. S. Crow, Stephensville, Texas, died May 3, 1892.
Dr. C. C. Francis, Cleburne, Texas, died November 16, 1892.
Dr. A. W. Pope, Marshall, Texas, died November 3, 1892.
Dr. A. D. Burroughs, Houston, Texas.
Dr. J. E. Roach, Sipe Springs, Texas, died April 10, 1893.
Dr. C. F. Payne, Comanche, Texas, died September 13, 1893.
Dr. J. L. May, Stephensville, Texas.
Dr. M. H. Oliver, Ennis, Texas, died September 5, 1893.
Dr. John L. Wagley, Cleburne, Texas, died December 13, 1893.
Dr. W. H. Waters, Independence, Texas, died June 4, 1894.
Dr. E. L. E. Castleton, Houston, Texas, died September 17, 1893.
Dr. James Crowling, Houston, Texas, died June 23, 1894.
Dr. H. F. Witherspoon, Corsicana, Texas, died September 7, 1894.
Dr. Michael Perl, Houston, Texas, died January 2, 1895.
Dr. Jas. Kennedy, Galveston, Texas, died March 27, 1895.
Dr. George Cupples, San Antonio, Texas, died April 19, 1895.
Dr. C. B. Raines, Mineral Wells, Texas [Honorary], died June 28, 1895.
Dr. W. P. Burts, Fort Worth, Texas, died September, 5, 1895.
Dr. G. M. D. Patterson, Franklin, Texas, died July 8, 1895.
Dr. Josephus Cummings, Austin, Texas, died July 13, 1895.
Dr. A. D. Paulus, Flatonia, Texas, date of death not reported.
Dr. J. L. Carter, Dallas, Texas, date of death not reported.
Dr. W. H. Wilkes, Waco, Texas, died August 14, 1896.
Dr. H. H. Darr, Caldwell, Texas, died November 22, 1896.
Dr. B. W. Bristow, Flatonia, Texas, died July 13, 1896.
Dr. J. S. Letcher, Dallas, Texas, died December 2, 1896.
Dr. W. B. Brooks, Dallas, Texas, died October 4, 1896.
Dr. R. S. Gregg, Manor, Texas, died January 22, 1897.
Dr. J. H. Blackburn, Mineral Wells, Texas.
Dr. E. N. Camp, Lewisville, Texas, died March 11, 1898.
Dr. N. B. Kennedy, Hillsboro, Texas.

The above list is all the secretary, unaided, has been able to prepare. Members in possession of facts regarding the death of any of the above, or of members not mentioned, date of death, nativity, when joined the Association, etc., will confer a favor on the secretary by communicating with him, and will also render a service to the Association.—[EDITOR.

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NEW MEMBERS.

ELECTED AT HOUSTON APRIL 26, 27, 28 AND 29, 1898.

NAME.	POSTOFFICE.	COUNTY.
Allen, George W	Flatonia	Fayette
Anderson, J. C	Granger	Williamson
Archer, Minnie C	Houston	Harris
Bell, M. C	Wallis	Austin
Batts, E. L	Galveston	Galveston
Brown, W. T	Wallis	Austin
Brumly, Wm. M	Houston	Harris
Calhoun, B. F	Beaumont	Jefferson
Cochran, J. V	Island	Limestone
Combs, F. J	Brownsville	Cameron
Cummings, H. W	Hearne	Robertson
Dorbank, J. D	Lampasas	Lampasas
Dudley, H. W	Hillsboro	Hill
Eidman, F. G	Houston	Harris
Gober, J. M	Matagorda	Matagorda
Gibson, J. A	Rockland	Tyler
Gilbert, Joe	Hornsby	Travis
Grant, E. E	Cypress Top	Harris
Graves, M. L	Waco	McLennan
Guinn, E. E	Jacksonville	Cherokee
Hix, R. W	Effie	Wilbarger
Hollins, M. B	Lovelady	Houston
Hillin, Sam H	Houston	Harris
Jackson, Edward B	Houston	Harris
Jeter, A. J	Astoria	Ellis
Johnston, Fred B	Anderson	Grimes
Kaiser, F. W	Flatonia	Fayette
Logan, J. H	Goldthwaite	Mills
Massie, James B	Houston	Harris
Mason, J. M	Floresville	Wilson
Mayfield, John C	Galveston	Galveston
McConnaghy, H. H	Hungerford	Wharton
McLaren, J. L	Houston	Harris
McKay, Donald	Houston	Harris

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Myers, C. C	Brookshire	Waller
Morris, Robt. T	Houston	Harris
Norris, Frank O	Eagle Lake	Colorado
Norsworthy, O. L	Houston	Harris
Ogden, T. R	Nona	Hardin
Phenix, N. J	Alvin	Brazoria
Phillips, C. B	Cuero	DeWitt
Pullen, W. B	Chireno	Nacogdoches
Rape, Wesley A	Victoria	Victoria
Raysor, P. M	Bryan	Brazos
Reeve, J. R	Blanco	Blanco
Robert, Jos. J	Hillsboro	Hill
Schramm, C. J	Fayetteville	Fayette
Scott, James W	Houston	Harris
Scovazzo, C	Bryan	Brazos
Shaw, E. M	Victoria	Victoria
Sherrell, Robt. A	Bockville	Panola
Short, J. L	Houston	Harris
Smith, Bat	Wharton	Wharton
Thompson, W. R	Fort Worth	Tarrant
Thompson, E. A	Navasota	Grimes
Thruston, D. M	Beeville	Bee
Toland, A. W	Chappel Hill	Washington
Urwitz, Max	Houston	Harris
Weems, M. A	Columbia	Brazoria
White, R. R	Temple	Bell
Wilder, R. N	New Ulm	Austin
Wood, H. A	Houston	Harris
Youngkin, John A	Yoakum	Lavaca
Zvesper, J. S	Ammonsville	Fayette

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HONORARY MEMBERS.

NAME.	POSTOFFICE.	STATE.
Bozeman, Nathan	New York	New York
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Douglass, Richard	Nashville	Tennessee
Dupre, D.	Dallas	Texas
Flewellen, R. J	Houston	Texas
Gray, Landon Carter	New York	New York
Heard, T. J	Galveston	Texas
Jones, R. H	Dallas	Texas
Keller, James M	Hot Springs	Arkansas
Le Mond, R. F	Denver	Colorado
Litten, J. M	Austin	Texas
Love, I. N	St. Louis	Missouri
Lydston, Frank G	Chicago	Illinois
McGuire, Hunter	Richmond	Virginia
McMutry, Louis S	Louisville	Kentucky
Madden, T. More	55 Merrion Square. Dublin	Ireland
Meyer, J. M	Danville	Kentucky
Noyes. J. F	535 Broad Street. Providence	Rhode Island
Osborn, T. C	Cleburne	Texas
Price, Joseph	Philadelphia	Pennsylv'nia
Reed, R. Harvey	Columbus	Ohio
Sears, J. H	Waco	Texas
Smith, Albert H	Philadelphia	Pennsylv'nia
Souchon, Edmund	New Orleans	Louisiana
Stout, S. H	Dallas	Texas
Stuart, D. H	Houston	Texas
Thompson, W. G	31 E. 31st St. New York	New York
Wallace, D. R	Waco	Texas
Wyeth, John A	New York	New York
Yandell, David W	Louisville	Kentucky
Young, S. O	Galveston	Texas

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ORDINARY MEMBERS.

NAME.	POSTOFFICE.	COUNTY.
Adams, W. A.	Equitable Building, St. Louis, Mo.	
Akard, W. P.	Springtown	Parker
Alexander, C. M.	Coleman	Coleman
Alexander, Jas. H.	Meridian	Bosque
Alexander, W. P.	Cleburne	Johnson
Allen, Geo. W.	Flatonia	Fayette
Anderson, W. B.	Brownwood	Brown
Anderson, J. C.	Granger	Williamson
Archer, Minnie C.	Houston	Harris
Archer, W. A.	Houston	Harris
Ashton, L.	Dallas	Dallas
Autrey, J. L.	Lima	Freestone
Baird, W. F.	Dallas	Dallas
Baldwin, Wm. S.	Paris	Lamar
Baldwin, A. P.	Tyler	Smith
Barham, J. H.	Nacogdoches	Nacogdoches
Bass, T. B.	Terrell	Kaufman
Batts, E. L.	Galveston	Galveston
Beaumont, G. B.	Coleman	Coleman
Becton, E. P.	Austin	Travis
Becton, Joe D.	Greenville	Hunt
Bell, T. J.	Tyler	Smith
Bell, M. C.	Austin	Travis
Benbrook, J. T.	Dallas	Dallas
Bennett, T. J.	Austin	Travis
Black, R. C.	Gainesville	Cook
Blailock, W. R.	McGregor	McLennan
Blake, D. B.	Cuero	DeWitt
Blalock, E. B.	Woodlawn	Harrison
Bobo, C. S.	Weatherford	Parker
Booth, T. S.	Ardmore	Ind. Ter.
Bowers, S.	Brenham	Washington
Boyd, F. D.	San Antonio	Bexar
Braunlitt, Albert C.	Decatur	Wise
Braunnagel, Julios.	San Antonio	Bexar
Britian, B. F.	Arlington	Tarrant
Brown, J. E.	McGregor	McLennan

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Brown, W. P.	Wallis	Austin
Brumby, W. M.	Houston	Harris
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Bundy, Z. T.	Millford	Ellis
Burch, J. D.	Aurora	Wise
Burger, Wm.	Bluff Dale	Erath
Burroughs, S. R.	Buffalo	Leon
Burton, D. T.	Grapevine	Tarrant
Calhoun, B. F.	Beaumont	Jefferson
Cantrell, C. E.	Wolfe City	Hunt
Carleton, J. E.	Bonham	Fannin
Carson, J. W.	Indian Gap	Hamilton
Carter, J. F.	Walhalla	Fayette
Cerna, D.	San Buenaventura, Coahuila, Mexico	
Chambers, W. F.	Austin	Travis
Chilton, R. H.	Dallas	Dallas
Church, E. T.	Terrell	Kaufman
Clark, I. E.	Schulenberg	Colorado
Clay, C. L.	Moody	McLennan
Cline, I. M.	Galveston	Galveston
Coble, J. M.	Dallas	Dallas
Cochran, J. V.	Island	Limestone
Cole, W. F.	Waco	McLennan
Coleman, P. C.	Colorado City	Mitchell
Collier, E. S.	Wills Point	Van Zandt
Collins, W. B.	Lovelady	Houston
Comfort, J. N.	Woodbury	Hill
Conerly, T. W.	San Angelo	Tom Green
Cooke, H. P.	Galveston	Galveston
Cozby, J. A.	Azle	Tarrant
Cross, W. D.	Sylvan	Lamar
Crowder, T. W.	Sherman	Grayson
Cummings, H. W.	Hearne	Robertson
Crump, J. G.	Saint Jo	Montague
Cunningham, S.	Taylor	Williamson
Daniel, F. E.	Austin	Travis
Davies, Robert P.	Petty	Lamar
Davis, E. P.	Houston	Harris
Denton, A. N.	Austin	Travis
Dodson, I. E.	Vernon	Wilbarger
Dodson, T. J.	Bartlett	Williamson
Dorbandt, J. D.	Lampasas	Lampasas
Dudley, H. W.	Hillsboro	Hill

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Egan, S	Dallas	Dallas
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Fields, J. T	Fort Worth	Tarrant
Fly, A. W	Galveston	Galveston
Ford, F. C	Nacogdoches	Nacogdoches
Fort, J. M	Paris	Lamar
Foutz, J. J	Gonzales	Gonzales
Fowler, B. A	Brownwood	Brown
Frashang, S. J	Norse	Bosque
Frazier, J. M	Belton	Bell
Frie, H. C	Saint Jo	Montague
Fry, J. M	Wills Point	Van Zandt
Gammon, Wm	Galveston	Galveston
Gardner, A. B	Bellville	Austin
Gibson, J. A	Rockland	Tyler
Gilbert, Joe	Hornsby	Travis
Gilbert, H. C	Smithfield	Tarrant
Gilcreest, J. E	Gainesville	Cook
Gilson, F. J	Calvert	Robertson
Gladney, S. M	Terrell	Kaufman
Gober, J. M	Matagorda	Matagorda
Grammer, R. B	Fort Worth	Tarrant
Grant, E. E	Cypress Top	Harris
Graves, M. L	Waco	McLennan
Gwinn, E. E	Jacksonville	Cherokee
Gwyn, C. L	Galveston	Galveston
Hackler, G. M	Ennis	Ellis
Hadra, B. E	San Antonio	Bexar
Harrison, R. H	Columbus	Colorado
Harrington, J. E	El Paso	El Paso
Haynes, F. E	Abilene	Taylor
Herff, F	San Antonio	Bexar
Herff, Adolph	San Antonio	Bexar
Herzog, Sofie	Brazoria	Brazoria
Hilgartner, H. L	Austin	Travis
Hill, B. W. D	Dawson	Navarro
Hillin, S. H	Houston	Harris
Hix, R. W	Effie	Wilbarger
Hodges, R. C	Houston	Harris

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Hulen, V. H.	Galveston	Galveston
Hunter, J. W.	Waco	McLennan
Hurt, Jno. H.	Big Springs	Howard
Inge, J. M.	Denton	Denton
Jackson, E. B.	Houston	Harris
Jarrett, J. C.	Valley Mills	Bosque
Jenkins, J. H.	Caldwell	Burleson
Jenkins, S. M.	Summer's Mill	Bell
Jeter, A. J.	Astoria	Ellis
John, W. N.	Nelson	Ind. Ter
Johnson, Fred. B.	Anderson	Grimes
Johnson, M.	Prairie Lee	Hayes
Jones, E. A.	Osage	Coryell
Jones, W. T.	Georgetown	Williamson
Kaiser, F. W.	Flatonia	Fayette
Keiller, W.	Galveston	Galveston
Kendall, O. J.	Wichita Falls	Wichita
Kennedy, T. L.	Galveston	Galveston
King, F. B.	Houston	Harris
King, S. F.	Sherman	Grayson
Kingsley, B. F.	San Antonio	Bexar
Kimbrough, W. G.	Krum	Denton
Kirkpatrick, S. B.	Commerce	Hunt
Knox, M. D.	Hillsboro	Hill
Knox, R. W.	Houston	Harris
Lancaster, W. H.	Moulton	Fayette
Lankford, J. S.	San Antonio	Bexar
Larendon, George W.	Houston	Harris
Leake, H. K.	Dallas	Dallas
Lee, George H.	Galveston	Galveston
Lee, W. P.	Cisco	Eastland
Le Grand, G. F.	Graham	Young
Lewis, T. Y.	Dublin	Erath
Logan, J. H.	Goldthwaite	Mills
Loggins, J. C.	Ennis	Ellis
Lovett, J. A.	Abbott	Hill
Link, E. W.	Palestine	Anderson
Litten, Frank	Austin	Travis
Luttrell, J. M.	Mineral Wells	Palo Pinto

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Maner, F. B.	Itasca	Hill
Marbury, A. J.	Ballinger	Runnels
Mason, J. M.	Floresville	Mason
Massie, J. B.	Houston	Harris
Matthews, C. O.	Terrell	Kaufman
Mayfield, J. C.	Galveston	Galveston
Mays, C. M.	Archer	Archer
McCaleb, J. H.	Webberville	Travis
McConnaghy, H. H.	Hungerford	Wharton
McCracken, J. H.	Mineral Wells	Palo Pinto
McCuistion, L. P.	Paris	Lamar
McDaniel, J. H.	Centerville	Leon
McFall, J. W.	Lipan	Wood
McGee, J. A.	Rice	Navarro
McKinney, E. J.	De Kalb	Bowie
McKnight, W. B.	Mansfield	Tarrant
McLaren, J. L.	Houston	Harris
McLaughlin, J. W.	Galveston	Galveston
McMahon, A. E.	Marshall	Harrison
McNeal, W. T.	Valley Mills	Bosque
McReynolds, Jno. O.	Dallas	Dallas
Menefee, A. J.	Rio Vista	Van Zandt
Menefee, W. E.	Cleburne	Johnson
Meyer, Joe	Paris	Lamar
Meyers, Robt. E.	Kemp	Kaufman
Meyers, C. C.	Brookshire	Brazoria
Miller, J. W.	Hillsboro	Hill
Miller, R. F.	Sherman	Grayson
Miller, R. A.	Dublin	Erath
Miller, T. A.	Corsicana	Navarro
Miller, R. L.	Decatur	Wise
Milliken, Sam E.	Dallas	Dallas
Monday, W. H.	Terrell	Kaufman
Montgomery, D. W.	Concord	Lee
Moore, W. H.	Runge	Karnes
Moore, W. M.	Paris	Lamar
Morris, Jno. E.	Madisonville	Madison
Morris, R. T.	Houston	Harris
Moss, R. E.	San Antonio	Bexar
Mullen, J. A.	Houston	Harris
Neal, J. M.	Bonham	Fannin
Neathery, E. J.	Van Alstyne	Grayson
Newland, W. B.	Gatesville	Coryell

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Nichols, J. R.	Greenville	Hunt
Norvell, E. E.	Bynum	Hill
Norris, F. O.	Eagle Lake	Colorado
Norsworthy, O. L.	Houston	Harris
Oates, T. F.	Mexia	Limestone
O'Barr, J. T.	Ledbetter	Fayette
O'Brien, J. G.	Dublin	Erath
Odom, J. A.	Quinlan	Hunt
Ogden, T. R.	Nona	Hardin
O'Hara, Jas. A.	Grandview	Johnson
Oliver, J. P.	Caldwell	Caldwell
Orr, C. L.	Kennedy	Karnes
Osborn, J. D.	Cleburne	Johnson
Paine, J. F. Y.	Galveston	Galveston
Peck, E. D.	Oglesby	Coryell
Peeples, D. L.	Navasota	Grimes
Perkins, A. N.	Sabine Pass	Jefferson
Pestridge, B. G.	Alvarado	Johnson
Phenix, N. J.	Alvin	Matagorda
Phillips, C. B.	Cuero	De Witt
Powell, J. H. E.	Smithville	Bastrop
Powell, W. P.	Willis	Montgomery
Rabb, E. M.	Halletsville	Lavaca
Raines, C. B.	Mineral Wells	Palo Pinto
Ralyea, S. C.	Ladonia	Fannin
Randall, Edw.	Galveston	Galveston
Rape, W. A.	Victoria	Victoria
Ray, D. M.	Whitewright	Grayson
Red, S. C.	Houston	Harris
Reeves, Jno. R.	Blanco	Blanco
Reid, D. L.	Wortham	Limestone
Rice, S. P.	Marlin	Falls
Roark, R. H.	Aurora	Wise
Robert, J. J.	Hillsboro	Hill
Rosser, C. M.	Dallas	Dallas
Roysor, P. M.	Bryan	Brazos
Rush, E. W.	Paris	Lamar
Saunders, B.	Fort Worth	Tarrant
Scarborough, A. O.	Snyder	Scurry
Schenk, A. H.	Kenney	Austin
Schramm, C. J.	Fayetteville	Fayette
Scott, A. C.	Temple	Bell
Scott, J. W.	Houston	Harris

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Scovazzo, C.	Bryan	Brazos
Schultz, C. A.	Alvarado	Johnson
Sedberry, W. R.	Clifton	Bosque
Self, T. N.	Joshua	Johnson
Sessions, E. L.	Hillsboro	Hill
Sharp, Jno. P.	Goldthwaite	Mills
Shaw, E. M.	Victoria	Victoria
Shaw, W. N.	Houston	Harris
Shearer, T. W.	Wallisville	Chambers
Sholars, S. W.	Orange	Orange
Short, J. L.	Houston	Harris
Shropshire, D. N.	Alvarado	Johnson
Shropshire, L. L.	San Antonio	Bexar
Simmons, J. E.	Caney	Matagorda
Sims, R. S.	Iowa Park	Wichita
Smart, J. H.	Dallas	Dallas
Smith, A. J.	Galveston	Galveston
Smith, Bat	Wharton	Fort Bend
Smith, M. M.	Austin	Travis
Smyth, T. F.	Mexia	Limestone
Stallcup, J. H.	Jefferson	Marion
Starley, W. F., Jr.	Galveston	Galveston
Stephens, E. L.	Fort Worth	Tarrant
Sterrett, R. H.	Beckville	Panola
Stinson, J. B.	————	————
Strayhorn, J. M.	Bartlett	Williamson
Stuart, Joe R.	Houston	Harris
Suttle, I. N.	Corsicana	Navarro
Tabor, George R.	Bryan	Brazos
Tate, H. L.	Lindale	Smith
Taylor, T. M., 140 40th St., New York City		New York
Terrell, S. L.	Dallas	Dallas
Terrell, W. M.	Farmer	Young
Thomas, G. T.	Rogers	Bell
Thompson, E. A.	Navasota	Grimes
Thompson, F. D.	Fort Worth	Tarrant
Thompson, J. E.	Galveston	Galveston
Thompson, Jno. W.	Huntsville	Walker
Thruston, D. M.	Beeville	Bee
Toland, A. W.	Chappel Hilll	Washington
Townes, J. M.	Joshua	Johnson
Truehart, C. W.	Galveston	Galveston
Turner, J. S.	San Antonio	Bexar

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Urwitz, Max	Houston	Harris
Vaughan, B. H.	Hillsboro	Hill
Wagley, T. J	Cleburne	Johnson
Walker, C. C.	Gainesville	Cook
Walker, R. R.	Paris	Lamar
Walker, W. W	Schulenberg	Fayette
Warfield, C	Galveston	Galveston
Watkins, W. A	Kemp	Kaufman
Weems, M. A	Columbia	Brazoria
Wier, J. P.	Covington	Hill
West, H. A	Galveston	Galveston
White, F. S.	Terrell	Kaufman
White, R. R.	Temple	Bell
Wilder, R. N	New Ulm	Austin
Williamson, E. M	Georges Creek	Johnson
Williamson, J. J	Cleburne	Johnson
Williamson, R. A	Hillsboro	Hill
Wilson, J. T.	Sherman	Grayson
Wilson T. M	Thornton	Limestone
Wolf, A. S.	Brownsville	Cameron
Wood, H. A	Houston	Harris
Wood, W. A	Hubbard City	Hill
Woodson, J. M	Temple	Bell
Wooten, J. S.	Austin	Travis
Yater, C. M	Grandview	Johnson
Yater, W. M	Grandview	Johnson
York, W. L	Decatur	Wise
Young, F. A	Navasota	Grimes
Youngkin, Jno. A.	Yoakum	DeWitt
Zvesper, J. S	Ammonsville	Fayette

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AUXILIARY ASSOCIATIONS IN AFFILIATION.

The following Societies have been reported as in affiliation with the State Association:

Western Texas Medical Association. B. E. Hadra, M. D., President, San Antonio; Jno. W. Kenney, M. D., Secretary, San Antonio.

Southeast Texas Medical Society. Dr. T. B. Sellman, President, Village; Dr. B. F. Calhoun, Secretary, Beaumont. Meetings every three months at Beaumont.

Central Texas Medical Association. J. D. Law, M. D., President, Salado; Maroni L. Graves, M. D., Secretary, Waco. Membership, 1896—98.

Waco Medical Society. Names of officers not reported. Number of members, 1896—30.

Johnson County Medical Society. W. E. Menefee, Secretary, Cleburne. President not reported. Number of members, 1896—37.

Austin District Medical Society, Austin, Texas. A. N. Denton, M. D., President; S. E. Hudson, M. L., Secretary.

Travis County Medical Society, Austin, Texas. Matthew M. Smith, M. D., President; Q. Cincinnatus Smith, M. D., Secretary.

Austin County Medical Society. —— Thompson, M. D., President, Nelsonville; A. H Schenk, M. D., Secretary, Kenney, Texas.

Williamson-Bell-Milam County Medical Society. Charles C. Gidney, M. D., President, Granger, Texas; J. C. Anderson, M. D., Secretary, Granger, Texas.

East Texas Medical Society. J. T. Bell, President, Tyler; E. A. Woldert, Secretary, Tyler Number of members, 1896—57.

Ellis County Medical Association. J. C. Loggins, M. D., President, Ennis; Chas. W. Simpson, Secretary, Waxahachie. Number of members, 1896—34.

East Line Medical Association. Names of officers not reported. Number of members, 1896—44.

Hill County Medical Association. Officers and members not reported.

North Texas Medical Association.

Terrell Medical Association.

Brazos Valley Medical Association. Officers and members not reported.

South Texas Medical Association. B. F. Calhoun, President, Beaumont; Vard H. Hulen, Secretary, Galveston, officers for 1898.

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OFFICERS OF THE TEXAS STATE MEDICAL
HOUSTON, TEXAS,

Session.	Date of Meeting.	Place of Meeting.	Presidents.	First Vice Presidents.
1	June, 1869..	Houston..... ...	T. J. Heard.....	R. H. Jones.....
2	June, 1870..	Houston..... ...	R. H. Jones.....	R. W. Lundy.....
3	June, 1871..	Houston	D. R. Wallace.....	L. Hundspeth.....
4	June, 1872.*	Houston	R. T. Flewellen...	J. A. McQueen.....
5	April, 1873..	Waco	D. F. Stuart.....	H. W. Brown.....
6	April, 1874..	Dallas.....	A. G. Clopton.....	T. D. Wooten.....
7	April, 1875..	Austin.....	H. W. Brown.....	L. R. Mayfield.....
8	April, 1876..	Marshall.....	R. H. Harrison....	John H. Pope.....
9	April, 1877..	Galveston.....	W. D. Kelly.....	Geo. Cupples.....
10	April, 1878..	San Antonio...	Geo. Cupples.....	R. W. White.....
11	April, 1879..	Sherman.....	John H. Pope.....	S. F. Matchett.....
12	April, 1880..	Brenham.....	A. R. Kilpatrick..	R. M. Swearingen....
13	April, 1881..	Waco.....	Ashbel Smith.....	S. F. Starley.....
14	April, 1882..	Fort Worth.....	S. F. Starley.....	W. P. Burts.....
15	April, 1883..	Tyler..	A. P. Brown.....	T. H. Nott.....
16	April, 1884..	Belton	H. C. Ghent.....	E. P. Becton.....
17	April, 1885..	Houston	E. P. Becton.....	R. Rutherford.....
18	April, 1886..	Dallas.....	T. H. Nott.....	R. H. Chilton.....
19	April, 1887..	Austin.....	S. R. Burroughs..	R. T. Knox.....
20	April, 1888..	Galveston.....	J. F. Y. Paine.....	H. K. Leake.....
21	April, 1889..	San Antonio...	R. M. Swearingen	A. Sims.....
22	April, 1890..	Fort Worth....	W. P. Burts.....	J. C. J. King.....
23	April, 1891..	Waco.....	W. H. Wilkes.....	P. C. Coleman.....
24	April, 1892..	Tyler.....	J. D. Osborn.....	T. J. Bell.....
25	May, 1893..	Galveston.....	J. H. Sears.....	C. M. Rosser.....
26	April, 1894..	Austin.....	J.W. McLaughlin	W. L. York.....
27	April, 1895..	Dallas.....	P. C. Coleman.....	J. T. Wagley.....
28	April, 1896..	Fort Worth....	J. C. Loggins.....	A. N. Denton.....
29	April, 1897..	Paris.....	Bacon Saunders...	S. C. Red.....
30	April, 1898..	Houston..... ...	J. T. Wilson.....	J. M. Fort.....

*Died July, 1886, and F. E. Daniel was appointed till next meeting.

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ASSOCIATION SINCE ITS ORGANIZATION AT JUNE 16, 1869.

SECOND VICE PRESIDENTS.	THIRD VICE PRESIDENTS.	SECRETARIES.	TREASURERS.
D. W. Wallace		A. Connell	F. Hassenberg
W. J. Locke		A. Connell	W. P. Riddell
J. T. Norris		A. Connell	W. P. Riddell
D. F. Stuart		A. Connell	J. Larendon
J. M. Morrison		S. O. Young	J. Larendon
M. H. Oliver		W. A. East	J. Larendon
M. A. Taylor	R. H. Harrison	W. A. East	J. Larendon
T. W. Wylie	W. H. Park	W. A. East	J. Larendon
R. M. Swearingen	J. H. Sears	W. A. East	J. Larendon
W. E. Saunders	J. T. Field	W. A. East	J. Larendon
S. F. Starley	S. Eagan	W. A. East	J. Larendon
E. J. Beall	O. H. Seeds	R. H. L. Bibb	J. Larendon
J. W. McLaughlin	J. A. Summers	R. H. L. Bibb	J. Larendon
W. A. Adams	Joe. S. Willis	W. J. Burt	J. Larendon
J. D. Osborn	Frank Allen	W. J. Burt	J. Larendon
H. H. Darr	M. Matkin	W. J. Burt	J. Larendon
John C. Jones	S. R. Burroughs	W. J. Burt	J. Larendon
J. C. Loggins	H. L. Parsons	W. J. Burt*	J. Larendon
A. M. Douglass	A. A. Terhune	F. E. Daniel	J. Larendon
A. V. Doak	O. Eastland	F. E. Daniel	J. Larendon
B. F. Kingsley	I. E. Clark	F. E. Daniel	J. Larendon
M. D. Knox	W. W. Reeves	F. E. Daniel	J. Larendon
W. L. Rogers	B. H. Vaughan	H. A. West	J. Larendon
F. W. Pitts, Jr	T. J. Bennett	H. A. West	J. Larendon
E. M. Rabb	W. A. Watkins	H. A. West	J. Larendon
W. R. Blailock	W. H. Lancaster	H. A. West	J. Larendon
N. B. Kennedy	T. B. Bass	H. A. West	J. Larendon
J. S. Letcher	David Cerna	H. A. West	J. Larendon
A. C. Scott	C. M. Alexander	H. A. West	J. Larendon
Taylor Hudson	R. W. Knox	H. A. West	J. Larendon

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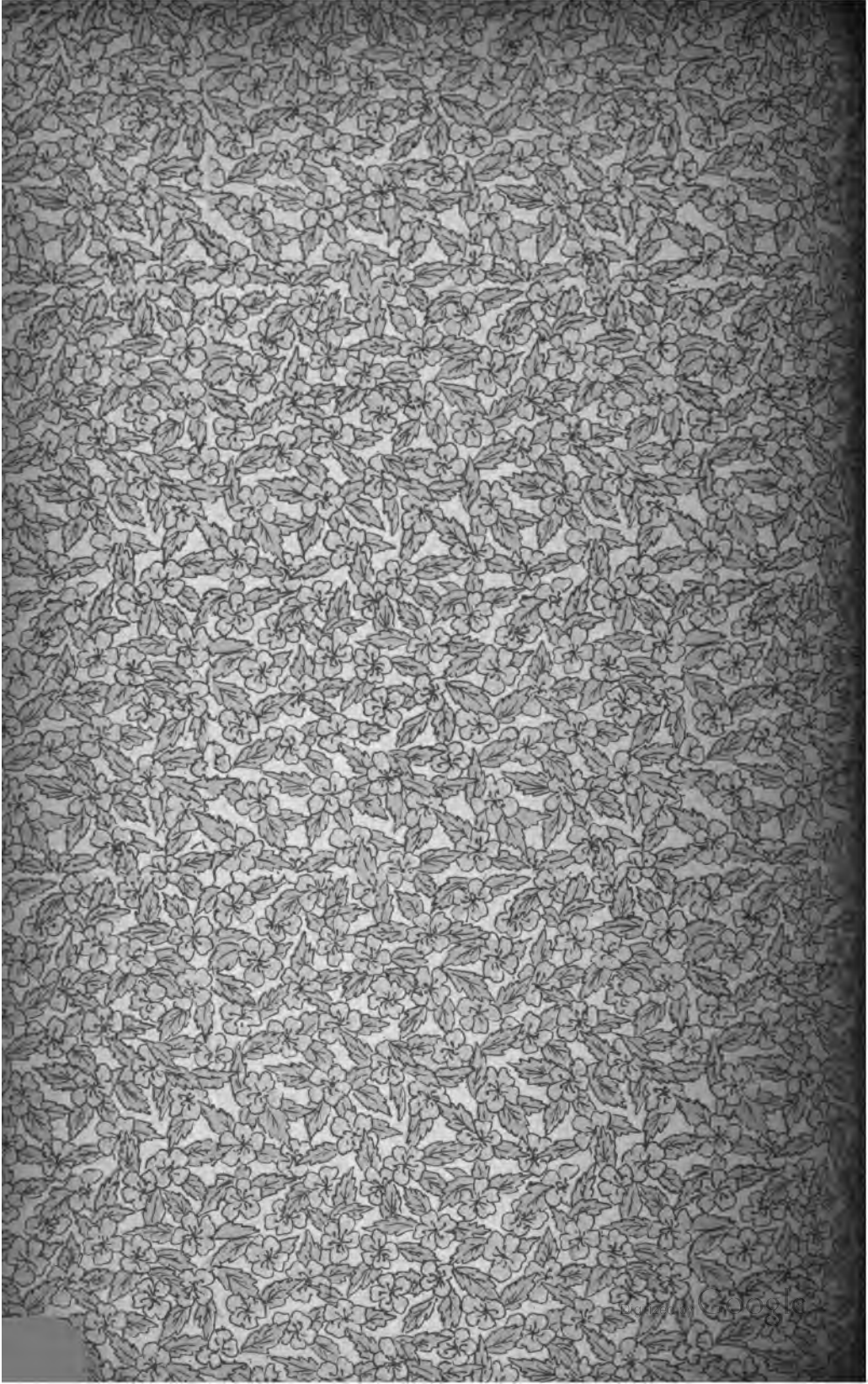

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